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ABSTRACT

To expand the use of women in nontraditional industrial careers, the U.S. Air Force examined the questions of recruiting, selecting, and training women for traditionally male blue collar work. An extensive review of the literature revealed that little empirical data on the effectiveness of various administrative policies had been collected. The Air Force also collected original data concerning civilian policies on the use of women in nontraditional industrial careers. A pilot study was performed in which information was collected from three industrial corporations employing a significant number of women in skilled industrial jobs; questionnaires were administered to personnel administrators, frontline supervisors, and managers. Based on the literature review, the data analysis, and recommendations by respondents in the pilot study, it was recommended that the Air Force (among other things) (1) offer extensive counseling to new recruits and enlisted women, (2) emphasize the positive aspects of nontraditional jobs such as good pay and job security, (3) sensitize key personnel to Air Force policies affecting women, (4) communicate Air Force policies concerning women in a highly visible manner, (5) eliminate sexist language from all Air Force communications, and (6) perform an organizational audit to gather data on Air Force policies affecting women and identify where the biggest problem areas are. (Appended are a partially annotated bibliography, the methodology for the literature review, and the pilot study instruments.) (Author/LMS)

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AIR FORCE HUMAN RESOURCES LABORATORY

UTILIZATION OF WOMEN IN INDUSTRIAL CAREER FIELDS

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March 1979
Final Report for Period 14 March 1977 – 28 April 1978

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In an effort to expand the utilization of women in nontraditional industrial careers, this report examines relevant managerial and personnel issues and develops recommendations for Air Force policies to deal with them. The report presents a comprehensive review of the literature, an annotated bibliography, data analysis from a pilot study of three corporations, and recommendations and conclusions for the above noted sources. These recommendations include suggestions (a) to perform an organizational audit to gather baseline data on Air Force policies affecting women and to identify where the biggest problem areas are; (b) to focus part of the recruitment effort on women who are in their mid-to-late 20s; (c) to emphasize the positive aspects of nontraditional jobs such as good pay and job security; (d) to offer extensive counseling to new recruits and enlisted women; (e) to encourage

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those women with a reasonably high chance of success; (f) to provide compensatory instruction in mechanical and electronics information; (g) to train women in groups of two or more; (h) to sensitize key personnel to Air Force policies affecting women; (i) to communicate Air Force policies concerning women in a highly visible manner; and (j) to eliminate sexist language from all Air Force communications.

SUMMARY

In an effort to expand the utilization of women in non-traditional industrial careers, the Air Force has encountered a number of managerial and personnel concerns. This report examines issues relevant to those concerns and develops recommendations for Air Force policies to deal with them.

Two approaches were used to explore the questions of recruiting, selecting, and training women for traditionally male blue-collar work. First, an extensive review of the literature was performed to find out what is already known in this area. It was discovered that very little empirical data concerning the effectiveness of various administrative policies have been collected. Nevertheless, a number of suggestions for personnel practices were gleaned from the existing literature. Section II discusses the literature review, and Appendix A contains an annotated bibliography.

The second approach was to collect original data concerning civilian policies on the utilization of women. A pilot study was performed in which information was collected from three industrial corporations employing a significant number of women in skilled industrial jobs; questionnaires were administered to personnel administrators, frontline supervisors, and managers. Three companies all have rather advanced policies concerning expanding the opportunities for women, and their experiences appear to have been, on the whole, quite promising. The most negative aspects of utilizing women in non-traditional fields, according to the respondents, are interpersonal in nature. In particular, male employees have in some cases shown resistance to and hostility toward corporate policies concerning women. However, respondents also noted a wide range of positive aspects of utilizing women. By and large, most respondents felt rather favorably about the actual performance of the women employees.

Based on the literature review, the data analysis, and a consideration of specific recommendations made by respondents in the pilot effort, a number of recommendations were developed. These recommendations, which are elaborated upon in Section IV, include the following:

> Perform an organizational audit to gather baseline data to identify the current Air Force policies affecting women, and to determine how and to what degree they are implemented, the level of knowledge about those policies, and the biggest problem areas.
>
> Focus part of the recruitment effort on women who are in their mid-to-late 20's; for example, through community colleges and postsecondary technical schools.

In recruitment, emphasize the positive aspects of nontraditional jobs (such as good pay and job security) rather than the nontraditionalness of the work.

Offer extensive career counseling to both new recruits and enlisted women; most firms find their most successful recruitment efforts to be internal.

Encourage only those women with a reasonably high chance of success to pursue careers in nontraditional blue-collar fields.

Provide, at least on a pilot basis, brief pretraining instruction to women to compensate for the women's limited exposure to mechanical and electronics information.

Bring women into training in groups rather than alone.

Sensitize key personnel (such as supervisors and training instructors) to Air Force policies vis-a-vis women and emphasize the role they play in implementing those policies.

Communicate Air Force policies affecting women in a highly visible manner.

Eliminate sexist language from all Air Force communications, but particularly from materials for recruitment, selection, and training.

Although these suggestions have not been evaluated in a rigorous way, their implementation should facilitate the recruitment, training, retention, and advancement of women in industrial fields in the Air Force.

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I. INTRODUCTION

Recent changes in personnel policies within the Air Force have opened almost all job specialties to women. Substantially larger numbers of women than ever in the past are entering the Air Force and are being assigned to traditionally male fields. These changes are partly the result of women's new self-concept and their demands for equal opportunity, but also reflect the changing character of the military establishment.

The issue of utilizing women in a broader range of assignments is of growing interest to policy-makers in the Air Force, who on one hand are attempting to expand the roles of female personnel, while at the same time recognizing the need to recruit and train personnel with adequate aptitudes for highly skilled jobs. In an effort to make nontraditional industrial careers more accessible to female enlisted personnel, the Air Force has experienced a number of managerial and personnel concerns. This report examines issues relevant to these concerns and develops recommendations for Air Force policies to deal with them.

Section II of this report presents a review of the literature relating to the issue of utilizing women in nontraditional career fields. In performing the literature review[1], it was discovered that virtually no data have been collected concerning the effectiveness of various managerial policies vis-a-vis successful recruitment, selection, training, and retention of women in nontraditional industrial fields. Nevertheless, there is a considerable amount of literature on women and work, job-related sex differences, and affirmative action programs. These materials, while they do not bear directly on the questions which are of concern, do provide an overview of the problems and serve as a basis for some policy recommendations. An annotated bibliography is presented in Appendix A.

The data collected specifically for this project are discussed in Section III. To investigate managerial policies for utilizing women in skilled industrial careers, pilot survey information was collected from managerial and supervisory personnel in private industry.[2] This information was used primarily to develop recommendations for Air Force policy.

Finally, Section IV of this report provides a number of recommendations for facilitating the recruitment and assignment of women in nontraditional skilled jobs in the Air Force.

1 The methods used in the literature review are described in Appendix B.

2 The original contract provided for the collection of data from 25 corporations. However, due to difficulties in obtaining clearance of the survey, the data for this report were derived from pilot tests of the instruments in three industrial corporations.

II. REVIEW OF THE LITERATURE

The literature review performed as part of this study, focused on six major issues which are relevant to the expanding utilization of women in nontraditional roles in the Air Force. First, as a means of providing an overview of the problems, the question of women in the military, both historically and currently, is addressed.

Second, the existing literature relating to non-military women and nontraditional careers is discussed. Particular attention is paid to women entering skilled, blue-collar jobs: their characteristics, reasons for entry into a skilled trade, mode of entry, and experiences. Consideration is also given to legal issues relating to sex discrimination in nontraditional fields.

The third and fourth issues concern existing evidence of sex-related differences. Sex differences in the abilities that are relevant to careers in skilled industrial fields are examined; for example, evidence of sex differences in spatial, perceptual, quantitative, and mechanical aptitudes is reviewed. Another subject is the possible difference between male and female workers with regard to such job-related attributes as turnover, absenteeism, job satisfaction, job motivation, and leadership potential.

Fifth, many of the difficulties which women have experienced in nontraditional fields is interpersonal in nature; therefore, some of the existing studies concerning attitudes and prejudices towards women in work situations are reviewed.

Finally, the literature is examined to ascertain the policies and practices of private firms that have an impact on female workers, particularly those in nontraditional fields. Unfortunately, there is virtually no empirical evidence relating actual policies to important outcomes, such as ease of recruitment, successful completion of training, job performance, and job satisfaction. The conclusions and recommendations which can be inferred from the literature are therefore largely judgmental.

WOMEN AND THE MILITARY

Historical Trends

In the United States, service in the military and the defense of the country have traditionally been the province of men with the exception of a few legendary folk heroines. Women provided informal support in traditional caretaking roles, but were not a part of the military system until the establishment of the Army Nurse Corps in 1901 and the Navy Nurse Corps in 1908. These groups, while uniformed, lacked full military status and benefits until after the Second World War.

With the advent of World War I, there was interest in admitting women to the military for various reasons. One reason was that women had, in the preceding decade, developed skills in the civilian labor force which were necessary to the functioning of the armed services. For instance, women dominated the secretarial, clerical, and switchboard operator fields. The change in the way warfare was waged and the consequent growth of the military organization were other influencing factors. A softening of traditional attitudes toward what was considered a "proper" role for women also contributed to consideration of allowing women in the armed forces (Calene, 1975).

In 1917 General John J. Pershing requested that 11 uniformed women telephone operators be sent to France. This request was granted, but the women were sent as civilian employees of the War Department. Other Army commanders in Europe requested the enlistment of women as clerical workers to replace enlisted men, but officials declared it would not be legal or in the Army's best interests to give women military status.

In contrast to the Army's negative interest in the utilization of women, the Navy and Marine Corps both expressed a desire to enlist women in order to alleviate critical shortage in clerical personnel assigned ashore. No existing statute was found which prohibited their enrollment: Navy and Marine regulations required the enlistment of "citizens." Thus, approximately 13,000 "Yeomenettes" and "Marinettes" volunteered and served as clerks, typists, stenographers, and telephone operators, with full military rank and status. These naval women enlistees, whose primary function was to release naval men for sea duty, were disbanded at the end of the war, and once again the only women in the armed services were the 1,500 in the two nurse corps.

During the period between the First and Second World Wars, two studies were made regarding the utilization of women in the military. Anita Phipps, a civilian who served as the Army's Director for Women's Relations from 1920 until 1931, advocated the establishment of a separate women service corps. Major Everett S. Hughes, in his paper, "Participation of Women in War," proposed that women be fully integrated into the Army. However, no action was taken on the recommendations of these studies.

With the beginning of World War II there was renewed interest in using women in the military. Reports of the success of the auxiliary forces of Great Britain, combined with the possibility of personnel shortages in the United States and the pressure of women's organizations, were among the forces which led Congresswoman Edith N. Rogers to introduce a bill creating a women's corps in the Army. Despite some opposition from various branches of the Army, a bill instituting Women's Army Auxilliary

Corps was signed into law in 1942. The women's reserve of the Navy (Women Accepted for Volunteer Emergency Services, or WAVES) was formed later the same year. The reserve branches of the Marine Corps and Coast Guard also recruited women, who were called SPARS (Semper Pratus, Always Ready) (Binkin, Bach, 1977).

Even before the first WAACS had completed their training, it became apparent to military policymakers that the original limit of 12,000 women would be insufficient to ease the Army's severe personnel shortages. Furthermore, it seemed likely that recruiting women on an auxiliary basis would be problematic. In the spring of 1943, the WAAC was changed to WAC (Women's Army Corps), a distinct branch of the Army which entitled women to many of the same privileges and rights of men. During the wartime period, WACS were largely assigned to clerical and administrative positions, but shortages of men opened up most non-combat fields to the women. For example, some women were employed as airplane mechanics, parachute riggers, gunnery instructors, air traffic controllers, and naval air navigators. In short, women worked in nearly every occupation outside of direct combat. Many were assigned overseas, mostly in Europe, but also in North Africa and the Pacific, frequently following closely behind the front lines. A total of 350,000 women served in active duty with one of the female military groups during the War, representing about 3% of those who served.

When the War ended in 1945, the succeeding demobilization was the largest and most rapid in U.S. history. Within 3 years, the number of women in the services decreased from 266,000 to 14,000, merely 1% of military strength. The position of women who remained in the military during this period was uncertain because authorization for the WAC was due to expire in 1948. However, this tenuous circumstance was alleviated by the passage of the Women's Armed Forces Integration Act of 1948. The legislation enabled all four services (Army, Navy, Air Force, and Marines) to offer a permanent military career to women (Binkin, Bach, 1977).

While the Integration Act of 1948 institutionalized the role of women in the military, it also preserved the discriminatory restraints upon women which had been characteristic of military utilization of female personnel throughout its history. Congress imposed an upper limit for the regular employment of women to 2% of the military services.

Further limitations were imposed upon women in several areas. The age of enlistment without parental consent differed for males and females; no woman under 18 could enlist, and if the potential candidate for the services was under 21, parental consent was necessary. Once enlisted, the women's ability to rise to higher ranks was hindered by regulations which prohibited the consideration of women for promotion beyond the rank of lieutenant colonel or commander. The 1948 legislation also discriminated against women with dependents. Benefits for the children of enlisted women were circumscribed by the requirement that the woman was the chief support or the father of those children was deceased. Otherwise, they were ineligible for the complete benefits of Regular Military Compensation.

The strains upon male personnel during the Vietnam conflict again prompted the re-evaluation of the woman's role in the military. In 1967, the legislation which limited the career opportunities, i.e., promotions for women, was altered, and the Congressional accession limitations on women were removed. However, until recently, none of the services came even close to recruiting to the 2% level. In the Army, from the period 1948 to 1970, the percentage of women remained remarkably constant, ranging from a low of .8% to a high of 1.8% during the Korean war period.

During the 1970s, several factors have influenced the Department of Defense to seek ways to expand the role of women in the armed services. The first of these was the decision in 1970 to end the draft, which led to the preparation of Central All-Volunteer Task Force report, "The Utilization of Military Women, " in 1972. Another strong influence is the Equal Rights Amendment with its implications for the military.

The growth of women's labor force participation in the civilian sector also played a part in changing people's conception of "women's roles" and in alerting the military personnel specialists to the possibilities of using "womanpower" to meet the services' needs. Furthermore, feminists in and out of the military are making people conscious of the sex discrimination that permeates much of our society. Legal challenges to discriminatory policies in and out of the military have become increasingly common.

Women and Military Policy

Discriminatory regulations concerning accession ceilings, entry requirements, entitlements, admission to service academies, and pregnancies and dependents which served to prevent or deter women from equal opportunity in the military, both numerically and in career options, were based on legal, logistical, and cultural grounds (Battle, 1976) rather than on the observed performance of female personnel in World War II. Major revisions of these policies have taken place as a result of several pressures, as discussed in the preceding section.

The Women's Armed Forces Integration Act of 1948, which regularized the status of women in the military, also established restrictive policies on accession ceilings and enlistment requirements. Of these restrictions, Corson (1972, p. 16) says, "...it is hardly surprising that the women themselves felt the best way to maintain a positive image of military women was to insist on higher standards. It was generally felt that the role of women in the military should be to serve as a readily expandable nucleus....". However, others have failed to find a rationale for these policies (Binkin, Bach, 1977).

The 2% limitation on women in the military was removed by Congressional action in 1967 to meet the increased personnel demands of the Vietnam conflict, but the differential in entrance requirements, that females must be 18, must have written consent if under 21, and must have a high school diploma or GED did remain in effect until 1975, when enlistment standards were equalized.

A traditional argument against expanding the number of women in the military cites their tendency to leave the services before completing their first enlistment. Largely, this was due to policies concerning marriage and pregnancy (Binkin, Bach, 1977). Prior to 1970, the services discharged any woman who became pregnant. A Defense Department directive in October of that year made possible the retention of pregnant women who did not wish to separate from the military, subject to a case-by-case review. The Army implemented this policy for married women in 1971, and 2 years later extended the right to request to remain on active duty during pregnancy to all women, regardless of marital status. Involuntary discharge of officers for pregnancy or parenthood was discontinued in September, 1974; 6 months later enlisted women were given the same protection from separation (Women in the Army Study Group, 1976). Similarly, all other branches of the military have revised the policies that prohibited a pregnant woman from remaining on duty. This position parallels the Department of Labor classification of pregnancy as a "temporary disability."

A related issue, which had imposed limitations upon women, concerned their dependents. The Women's Armed Services Integration Act of 1948 discriminated against women who were not the sole support of their husbands and/or children. Dependents of women personnel were denied benefits unless the father was deceased or the woman provided chief support. In 1973, the Supreme Court presided over a case filed by an Air Force officer charging the military's regulation to be discriminatory. An eight-to-one decision in the Frontiero V. Richardson suit gave dependents of female personnel the right to full benefits. There has also been an equalization of family entitlements between service women and service men.

Perhaps the most publicized and debated step taken toward the full equalization between men and women in the military was the 1975 Congressional decision to admit females to the service academies. Because the academies exist essentially to educate future officers for combat activity, the admittance of women signals legislative support for the complete utilization of women. The issue of the military woman in combat is, and has always been, at the crux of all restrictions placed upon females in the services.

Women and Occupational Assignments in the Military

The issues surrounding the utilization of women have been of great concern to all branches of the armed forces. The most controversial issue in the discussion of utilization of women is their assignment to combat duty. Although combat weapons training is provided; at present, all of the services have prohibited the employment of women in combat-oriented positions.

The combat-related policies of the American armed forces are not markedly different from those of other nations. Kinzer (1976) has pointed out that Arab, Norwegian, Israeli, and Yugoslav women have served in combat. By and large, however, most countries exclude women from combat duty, although combat training is provided by some. Even

in Israel, where universal conscription requires all 18-year-old men and women to participate in the Defense Force, women are used primarily to release men for combat (Thomas, 1976).

The passage of the Equal Rights Amendment, however, would undoubtedly necessitate some changes in American policy. Mr. William H. Rehnquist, who in 1971 was the Assistant Attorney General of the United States, gave his legal opinion on this issue during the House Judiciary Committee hearings on the Equal Rights Amendment in April, 1971:

> The question here is whether Congress would be required either to draft both men and women or to draft no one. A closely related question is whether Congress must permit women to volunteer on an equal basis for all sorts of military service, including combat duty. We believe that the likely result of passage of the Equal Rights Amendment is to require both of those results. As has been pointed out by many of the Amendment's supporters, that would not require or permit women any more than men to undertake duties for which they are physically unqualified under some generally applied standard...." (Rehnquist, cited in Frings, 1972).

If the Equal Rights Amendment is ratified, there will probably be an early test case of the legality of prohibiting women from combat. There are many indications that at least some women want to serve on combat duty. Women at all of the service academies have spoken out on this issue. Recently four women in the Navy sued the Navy for the right to be assigned to serve on ships at sea other than hospital ships. The contention of this class action suit is that prohibition from sea duty denies them opportunities from training and advancement and also prevents them from sharing in the "true Navy purpose."

Due to the restrictive policies related to the combat question, the services, until several years ago, were coordinately restrictive about the Military Occupational Specialties (MOS) which were open to women. The military, as well as private industry, has been subjected to increased pressure to comply with Federal directives on equal opportunity employment.

The Integration Act of 1948 left authority for the assignment of women in the Air Force to the Secretary of the Air Force, with the provision that no assignment be made to aircraft engaged in combat missions. Through strict definition of the term "combat" the Air Force barred women from serving aboard any aircraft as aircrewmembers until 1976. In 1976, the Air Force began training the first group of female pilots, and since that time, has been expanding the role of women to include navigator and missile launch personnel.

There are wider opportunities for enlisted women in the Air Force; only 13 occupational fields are closed to them for "combat" reasons (Table 1). However, the lack of housing facilities for unmarried women bars their assignment to 45% of the overseas jobs.

Because the Air Force has the smallest ratio of combat-to-support personnel of any of the services, there should exist the greatest opportunity for the interchangeable use of women. However, present plans are to fill only one out of every eight appropriate jobs with women by 1982.

Despite these restrictions which the Air Force has imposed on the utilization of women, it is clear that the role of women in the Air Force is undergoing an unprecedented expansion. The Air Force is currently interested -- as is also the case for the private sector -- in recruiting and training women for a variety of nontraditional assignments. Like most changes, this expansion has encountered some difficulties, from both the women themselves, who may lack motivation and prerequisite skills, and from men, who are skeptical of women's abilities and their ability to perform effectively or who perhaps are threatened by the implications of changing roles. The issues underlying these difficulties are scrutinized in greater detail subsequently in this literature review.

TABLE 1

Air Force Enlisted Occupational Fields Closed to Women[a]

Defense Aerial Gunner (111X0)

In-flight Refueling Operator (112X0)[b]

Flight Engineer (113X0A)[b]

Flight Engineer (113X0C)[b]

Flight Engineer (11390)[b]

Aircraft Loadmaster (114X0)[b]

Pararescue/Recovery (115X0)

Air Traffic Control (272X0D)

Radio Operator Maintenance and Driver (275X0)

Ground Radio Communications Equipment (P304X4)

Security Specialist (811X0)

Security Specialist , Dog Handler (811X0A)

Sensor Operator (99602)

[a]Effective 30 April 1978 (AFR 39-1).
[b]These fields are now open to women on a test basis.

WOMEN AND NONTRADITIONAL CAREERS

Occupational Segregation

The data on occupational distribution presents an impressive and unmistakable picture of occupational segregation on the basis of sex. Occupational segregation has two noteworthy aspects. First, it involved a horizontal division of labor -- a distribution of workers such that certain occupations are dominated by women and others by men, disproportionate to their overall participation in the labor force. Measurements of this type of concentration have shown that, despite changes in the sexual distribution of specific sectors over time, the overall level of occupational segregation has changed very little in the past few decades (Bergmann & Adelman,1973; Gross, 1968; Lapidus, 1976; Oppenheimer, 1968). A horizontal division of labor by sex appears to be a universal of human society, although the exact division of sex-ordered tasks varies considerably from one society to another (Hartman, 1976).

The second dimension of job segregation is concerned with the vertical stratification of particular occupations. Regardless of the occupation, there is a marked tendency for the proportion of men to increase at successively higher levels of status, income, and responsibility. Hierarchial stratification is evident even in those occupations in which women predominate, such as teaching and social work.

The narrowness of women's occupational range has been well-documented. In the decade between 1960 and 1970, despite a substantial increase (38%) in female labor force participation, women remained concentrated in a handful of occupational groups. In statistics from the 1960 and 1970 census, we find that over half of employed women were employed in clerical, operative, or service positions. The employment growth during this decade was primarily in jobs which are traditionally female, such as typists, stenographers, secretaries, and health service workers. In fact, in many traditionally female jobs, the ratio of women to men increased from 1960 to 1970. For example, among clerical and kindred workers the ratio increased from 2.12 to 2.78; among health service workers, the ratio increased from 4.89 to 7.46; and among personal service workers, the ratio rose from 1.13 in 1960 to 1.97 in 1970 (U.S. Bureau of the Census, 1976).

Within each sector, then, women tend to be concentrated in specific industries which have traditionally employed them. For instance, within the service sector in 1973, women made up 61% of the elementary and secondary school teachers, but 42% of college teachers;women were 46% of all employees in retail trade, but only 23% in wholesale trade. Similarly, in the manufacturing sector, women were 46% of all employees in textile mill products, 81% in apparel, 60% in leather, but less than 10% in lumber, primary metal, or petroleum refining (Waldman, Mc Eaddy, 1974).

A more detailed analysis of occupational segregation by individual occupation highlights two further aspects of the problem. First, unlike men, women are heavily concentrated in a very restricted range of occupations. The Bureau of the Census lists more than 250 distinct occupations,

yet half of all employed women were working in only 21 of them in 1969. Approximately 25% of all women workers were employed in just five occupations: secretary-stenographer, household worker, bookkeeper, elementary school teacher, and waitress. By contrast, men are much more widely dispersed, with half of the male workers in 65 different occupations (Hedges, 1970). Looking at the same kinds of statistical evidence in another way, it can be observed that most women work in predominantly female jobs. In 1960, for example, nearly half of all women workers were in occupations in which women represented 80% or more of total employment, while only 2% of employed men were in these same occupations (Zellner, 1975). These data indicate that not only are there "men's jobs" and "women's jobs," but also that there is little opportunity for selection within female-type jobs.

There is also evidence that the employment distribution of women is skewed toward the lower end of the occupational structure. In both white-collar and blue-collar jobs, men tend to have the highest-paying, highest-status jobs. In 1971, greater than 60% of female white-collar employees worked in clerical jobs, while nearly 70% of the men in white-collar jobs worked in either the professional/technical or managerial categories. A similar picture is found in blue-collar occupations, where about 45% of the males, as opposed to 11% of the females were in skilled crafts or supervisory jobs in 1971, while over 80% of the blue-collar women and about 40% of the blue-collar men were classified as operatives (U.S. Dept. of Labor, 1972). Even in specific industries where women are over represented as operatives, they are often virtually excluded from craft jobs. For example, in the electronics industry of Cleveland, 57% of the operatives but 3% of the craftspersons were found to be women (Simmons et al., 1975).

The outlook for occupational "desegregation" does not look particularly promising. Based on projections to 1985 made by the Labor Department in 1974, over 2/3 of the total increase forecast for women is expected to take place in clerical and service fields. Only 3.4% of the employment gains are projected for craft jobs. The concentration of women in low-paying jobs, and their underrepresentation in high-paying jobs, will not, according to these predictions, change much by 1985. Some data and forecasts are shown in Table 2. Among the 123 occupations considered, women were in 1970 and will be in 1985 under represented among all 10 of the highest-paying jobs, while a disproportionately high percentage of women workers were and will be employed in all but one of the 10 lowest paying jobs (Lecht, 1976).

Women Employed in the Skilled Trades

The dominance of men in craft jobs is unparalleled in any other sector and therefore represents one of the extremes of occupational segregation. Even during the Second World War, when women working in production jobs in defense industries were highly visible, (e.g., "Rosie the Riveter"), they filled only about 5% of all skilled jobs. Every decennial census from 1900 to 1960 has revealed that women are only 2% to 3% of all crafts workers.

TABLE 2

Representation of Women in Ten Highest-Paid and Ten Lowest-Paid Occupations

Occupation	1970	1985[a]
Ten Highest Paid:		
Stock and bond sales agents	8.6%	12.5%
Managers and administrators, n.e.c.	11.6	11.0
Bank officials and financial managers	17.4	23.5
Sales representatives, manufacturing	8.5	5.7
Real estate appraisers	4.1	8.7
Designers	23.5	30.3
Personnel and labor relations workers	31.2	28.7
Sales representatives, wholesale	6.4	9.9
Computer programmers	22.7	18.7
Mechanical engineering technicians	2.9	7.3
Ten Lowest Paid:		
Practical nurses	96.3	97.8
Hairdressers and cosmetologists	90.4	92.4
Cooks, except private household	62.8	60.4
Health aides, except nursing	83.9	79.2
Nurses aides	84.6	88.9
Sewers and stitchers	93.8	93.5
Farm laborers	13.2	17.4
Dressmakers and seamstresses	95.7	94.2
School monitors	91.2	95.8
Childcare workers, except private household	93.2	88.4
All study occupations	35.9	40.5
All Occupations	37.7	39.0

[a]Projected

By 1970, however, some changes were noticeable. In terms of absolute numbers, there was an increase of women employed in the skilled trades from 277 thousand in 1960 to 495 thousand in 1970. This rate of increase (79%) was more than twice that for women in all occupations (38%), and was eight times as great as that for men in the skilled trades during the same period (Hedges, Bemis, 1975). Inspection of the data for specific trades reveals the gains women made were in a broad range of skilled occupations. In comparison with 1960 figures, the 1970 census showed the following rates of increase, in terms of women as a percentage of the total in various traditionally male, blue-collar occupations: plumbers and pipefitters 26%, telephone installers and repairers 75%, and metal job dye setters 33% (Calculated from Table 2, Hedges and Bemis, 1975). Although it is too soon to ascertain the long-range trend of women working in the skilled trades, data from the 1973 Current Population Survey suggest that the movement of women into crafts jobs is continuing (Women's Bureau, 1974).

Despite this optimistic outlook for increasing female participation in nontraditional industrial career fields, women still represent a very small fraction of the total workforce in these occupations. In 1970, the percentages of women employed in a sampling of trades were as follows: brickmasons and stonemasons 1.3%, electricians 1.8%, machinist 3.1%, locomotive engineers .8%, plumbers and pipefitters 1.1%, and aircraft mechanics 2.9%. In only a handful of occupations did women represent at least 25% of all employees - bakers, bookbinders, window dressers, engravers, and tailors (Hedges, Bemis, 1975).

Characteristics of Women Employed as Craftspersons

In comparison with the interest in such high-status nontraditional careers as law, medicine, management, and engineering among feminists and social scientists, there is a surprising lack of expressed concern with the special characteristics, needs and problems of women entering industrial career fields. An examination of the literature on nontraditional occupations in sociological, guidance, and industrial psychological journals lends credibility to the accusation of "elitism in the women's movement" (Murphy, 1973). Thus, while a good deal is known about the kinds of influences which motivate college women to seek medical and legal training, there is virtually no understanding of the forces which lead women to seek jobs in male-dominated trades. Similarly, there is little knowledge about the characteristics of women who are attracted to such occupations, despite the fact that this information could be useful in formulating personnel policies concerning recruitment and training.

This neglect of women in working-class jobs has not always prevailed. In the first 25 years of this century, there was considerable research interest in the conditions of women employed in blue-collar jobs. This interest took the form of surveys and case studies in a variety of occupations, as illustrated in the following sample of book titles from this period: Saleswomen in Mercantile Stores, Women Workers in Factories, Women as Munition Makers, Prisoners of Poverty: Women Wage Workers, Their Trades and Their Lives, Artificial Flower Makers, and Women in the Bookbinding Trade (for the full references and additional titles, see Roby, 1974). These books, together with articles appearing in both lay periodicals and academic journals, described the working conditions of blue-collar

women and the social, psychological, and physical problems which resulted from these conditions for both the women and their families. Such studies helped to initiate reform legislation for working women. During World War I, interest in urban social reform in general, and blue-collar working women, in particular, began to decline.

In recent years not a single book has addressed itself to the needs, problems, or conditions of women employed in industrial blue-collar jobs, and scholarly articles on this subject are extremely rare. In contrast, there has been extensive research attention paid to men in industrial work roles by sociologists, industrial psychologists, economists, and industrial relations experts in the past few decades. Roby (1974) found that not a single article on blue-collar women has been published in either the American Journal of Sociology, the American Sociological Review, or Sociological Inquiry within the past 30 years, and only one such article has been published since 1910.

There does, however, appear to be a resurgence of popular and academic interest in women in blue-collar jobs. After a half of a century of inattention, several influences have combined to stimulate new concern for and research on women in working-class jobs. These influences include the general spirit of feminism prevailing in the 1970s, the rise of the more specific blue-collar women's rights movement, and the increasing concern with "blue-collar blues."

The 1970 census provides some demographic information about women employed in skilled trades. The average craftswoman was several years older than the average female employee in all occupations (42.9 versus 39.2 years). Women employed in a skilled blue-collar job had slightly less education as a group, but the difference in median years of schooling was less than half a year (12.0 versus 12.4 median years). One out of 10 of these women had 1 year or more of college. With regard to marital status, the craftswomen were as likely as other working women to be married, less likely to be single, and more likely to be widowed or divorced. The racial composition of women in the trades was about the same as for all women workers, with nine out of ten being white. About half of the married women in skilled jobs were married to blue-collar workers and almost 1/4 were wives of men in white-collar occupations. Data from the more current Population Survey revealed a tendency for women in the trades to be better educated in 1973 than in 1970 (12.2 years versus 12.0 median years of schooling) and to be younger (median age 40.4 years versus 42.9 years). The trend thus appears to be that demographic differences between women in skilled trades and women employed in other jobs are narrowing or disappearing.

Experiences of Women in Skilled Industrial Jobs

The popular press and business and trade magazines have given considerable coverage within the past few years to women in nontraditional blue-collar employment. The "human interest" type articles appearing in

these media typically focus on the experiences of one or two women who have broken through the "males only" barrier in such fields as construction, mechanics, and electronics. Almost all of these articles report on women who have encountered little or no difficulties with male coworkers, supervisors, or the work itself. For example, Louviere (1976) tells about the successful mechanic who operates a business named "Transmissions by Lucille"; Harris (1975) describes the transition of Ms. Jackie Sue Gregory from telephone clerk to heavy equipment operator; Shepherd (1970) narrates the positive experiences of women trained as welders in a shipyard; Dietz (1977) discusses the motivation and direction of women in an electrician's training course.

These anecdotal materials, which are quite plentiful, constitute the bulk of existing information concerning how women fare once they have made the decision to seek employment in skilled industrial fields. It is quite likely that these reports are biased toward favorable accounts of working experiences. Women who have encountered problems in skilled jobs are unlikely to have their views represented in the popular or business media. For instance, most of the popular articles report on women who found their male coworkers cooperative and accepting. A typical comment appeared in a Labor Department magazine from a woman machinist: "They (her fellow workers) kid me some, but they accept me. And they helped me adjust to the demands of this work... On the job, they treat me just like they treat everyone else." (Changing Patterns, 1976, p. 10).

However, a few reports in the feminist press suggest that harassment, mistreatment, hostility and paternalistic attitudes on the part of coworkers and supervisors is a problem for at least some women entering the skilled trades (for example, West, 1977). Roby (1974) has similarly mentioned anecdotal reports of interpersonal difficulties experienced by women steelworkers:

> Women steelworkers who have recently broken into jobs held only by men since World War II have reported that black men, perhaps sensitized by their own experiences of fighting discrimination, have helped them learn their new jobs while white men have often harassed them and refused to teach them even safety precautions. Harassment including foremen making women during their probationary period carry excessive weights which tractors rather than men normally carry; male workers' refusing to teach women safety precautions which they have always taught new men; men telling women, "you wanted the job, now you can cope with it," and foremen refusing women normal breaks and giving them the jobs of two men to perform are all happenings which were reported to me by women who have recently broken into jobs traditionally held by men. Some of this treatment resulted in physical injury; some resulted in women dropping out of the job or being fired; some was followed by women gritting their teeth, keeping their jobs and later organizing other women or filing union complaints or lawsuits against the companies (Roby, 1974, p. 30).

Objective and systematically collected data concerning women's on-the-job experiences in craft jobs are scarce. The Women in Apprenticeship Project sponsored by the Wisconsin Division of Apprenticeship and Training conducted a survey of the women who had entered apprenticeship during the first 2 years of the project (July, 1970 to June, 1972). Information was collected from 159 women, who constitued 85% of the population. Of the total group who entered the program, 24% (N=45) dropped out. While none of the dropouts listed the difficulty of the work itself as the primary reason for leaving, 32% of the dropouts, compared with only 15% of those women who continued the program, said that some physical aspects of the job were too difficult. Among both groups, relations with co-workers appears not to have posed a serious problem: on 3% of the dropouts and 2% of those continuing said they did not have friendly daily relations with co-workers. According to their self-reports, these women were more likely to encounter resistance to their career choice from friends and relatives than from fellow workers.

The most useful information concerning the experiences of women in nontraditional blue-collar jobs comes from a recent study by Meyer and Lee (1976). These investigators conducted interviews with employees of 10 utility companies concerning their experiences with the integration of women into traditionally male white-collar (mostly managerial) and blue-collar (mostly crafts) jobs. Various groups of employees were interviewed: women in nontraditional occupations (N=164), their male co-workers (N=64), their subordinates (N=56), and managers in the companies (N=102). Most of the blue-collar women interviewed expressed favorable attitudes to their job: 40% said they liked their job very much, and 34% said they liked it fairly well. Only 14% of these women disliked their work. (By contrast, however, only 3% of the women in nontraditional white-collar jobs disliked their jobs.) When asked to explain the aspects of their jobs which they least liked, the things most commonly mentioned by the blue-collar women were "dirty work" (15%), the "mechanical aspects" of the job (14%), and the "outside environment" (12%).

Another area of questioning related to the women's perceptions of their own qualifications and handicaps in performing their work. A majority of the women (79%) felt just as well qualified for their jobs as the men, and 55% said that they did not feel handicapped in any aspect of the job. Among those women who mentioned a handicap, 16% cited lack of technical know-how, and 26% cited physical strength and stamina as the sources of the handicap.

The majority of blue-collar women felt that they experienced more on-the-job difficulties than did most men. The most frequently mentioned difficulty was the harassment by male coworkers, listed as a problem by 29% of the women. In some cases, the interviewees maintained that some of the men sabotaged the women's work in order to make them look bad. In other cases, the women felt that men often came to each other's aid on difficult assignments, but rarely helped a woman with a similar assignment. A somewhat less-frequently named difficulty (15%) was the problem of supervisors' showing animosity towards the women. One woman described her situation in the following terms:

> The men make it tough for me to do well, and the supervisor is the worst. He gives me all the tough assignments and he won't help me if I have a question. He says, "If you think you are such a smart ass and can do this kind of work, figure it out for yourself."
> (Meyer, Lee p. 63)

A third form of harrassment, mentioned by 14% of the women, came from the general public. This harrassment generally took the form of hostility towards a woman's taking a job "away" from a man, but sometimes took the form of sexual advances.

This study suggested that the women entering craft jobs normally develop strategies to enhance their own effectiveness and thereby reduce the problems they experience. The most commonly used approach by this group of women (37%) was to become technically competent by learning the job as best they could. The authors explained the women's rationale for this approach as follows:

> The women very often felt that they were on the spot, in that the men would be looking for inadequacies in their ability to do the work. Therefore, in order to insure that they would not make mistakes or look bad to their male working associates, many of them felt that they had to make an extra effort to learn the job as well as possible.
> (Meyer, Lee p. 87)

Other frequently mentioned approaches for enhancing their own effectiveness included ignoring the men's harrassment (36%), working hard and doing more than one's share (32%), and maintaining a friendly, cooperative attitude (32%).

Interviews with these women's supervisors revealed that about half the women were judged to be performing very well. Only about 10% were described as performing very poorly. The supervisors frequently attributed the poor performance to the fact that women had been persuaded to apply for the jobs even when they had no interest in the work itself.

In sum, the findings from this study suggest that women entering traditionally male jobs are under greater pressure than is true of the typical male to do a good job and to manifest a "positive attitude," even though peer harrassment may make it difficult for them to do so. On balance, the women appeared to have developed strategies which enabled them to function fairly well. Further research in this area is, of course, needed before coming to conclusions about the job experiences of skilled blue-collar women or before formulating policies to help make those experiences more positive ones.

Reasons for Entry into Skilled Trades

Although there is little documentation concerning the reasons a woman would choose a male-dominated production job, Hedges and Bemis (1975) suggest several potentially important factors. First of all, while the women's movement has made no special efforts to involve blue-collar women, it nonetheless cannot have failed to accomplish considerable "consciousness-raising" among working-class women. Public opinion surveys demonstrate the changing picture of women's perceptions of their own roles and status. In 1962 only a minority of women responding to a Gallup Poll believed that women were unfairly treated. In 1970, women were about equally divided. By 1974, however, the women polled approved by a two-to-one margin the effort to improve their status and secure equality, and younger women were even more supportive of social change affecting sexual equity (Chafe, 1976). A Harris survey asking the same question detected a dramatic shift in a 1 year period from 1971 to 1972 (Murphy, 1973). In a study comparing subjective vs. objective measures of sex discrimination over the 1969-1973 period, Staines, Quinn and Shepard (1976) attributed to the consciousness-raising efforts of the women's movement their finding that while objective financial discrimination did not change, perceptions of discrimination for women as a whole doubled. Interestingly, the most substantial proportionate increases in perceived discrimination occurred among blue-collar workers: 1.9% of the national probability sample polled in 1969, compared with 10.4% polled in 1973 reported sex discrimination at work.

Hedges and Bemis (1975) also mentioned economic considerations as a factor motivating women to seek employment in the trades. For women with no more than a high school education, the skilled trades offer excellent opportunities for higher wages than typically can be earned in "female" jobs requiring comparable levels of education. Apprenticeship and on-the-job training programs are particularly desirable from the economic point of view. Baker (1975) reported some informal evidence that higher pay is the major attraction to the skilled trades among women.

Psychological advantages are also cited by Hedges and Bemis as a contributing motivational force: "Jobs in the skilled trades generally present a striking contrast to the controlled and fragmented jobs of many factory and office workers. Many offer more independence and freedom, as illustrated by the opportunity to develop particular ways of working and to move about while performing the work, and individual ownership of tools. The work itself, which may involve producing a finished product, brings a sense of achievement. In addition, some women find the outdoor work that typifies some skilled occupations

more satisfying than work in offices, factories, or stores." (p. 18).

In the previously mentioned study by Meyer and Lee (1976), the women employed in nontraditional blue-collar jobs were asked what specific aspects of the job they liked best. The most frequently cited aspect was the high pay, which was mentioned by 45% of the sample. Other commonly mentioned advantages of their current job were its variety (29%), its challenge (23%), and the amount of freedom it afforded (11%).

On the basis of these considerations, in addition to the legal constraints against sex discrimination, it seems likely that the trend toward increasing female involvement in industrial careers will continue in the years ahead.

Modes of Entry into Skilled Blue-Collar Jobs

Women encounter a host of social, psychological, and economic barriers in breaking into skilled trade. Females are socialized to think of craft occupations as "unladylike" or a man's job throughout their childhood and adolescense (see, for example, Bernard, 1971; Harmon, 1971). The educational system has traditionally done little or nothing to foster the development of mechanical skills in its female students and, many schools have in the past prohibited girls from enrolling in ship and industrial arts courses (Frazier and Sadker, 1973; Roby, 1976). School guidance counselors and advisers also tend to steer female students toward traditional female roles. Psychologically, women may fear that they will be perceived as unfeminine and, therefore, socially unacceptable if they express interest in--much less succeed in--traditionally male jobs.

The vocational education system in our society has been the target of a great deal of feminist criticism in recent years. Vocational training has been an important vehicle for preparing people for entry into skilled or semi-skilled occupations or into formal apprenticeship programs. In the past 10 years, vocational education has flourished in terms of both enrollment and funding. But while more than half (55.5%) of all enrollees in secondary, postsecondary, and adult vocational education are women, only a small minority of these women are being trained for well paying jobs. Thirty-Seven percent of the women enrolled in Federally assisted vocational training programs were studing home economics, but only 3.8% were being given the kind of training which would lead to a job other than housewife. Only 5% of female vocational students were enrolled in industrial or technical training (Lehman, 1977).

Sex discrimination in vocational education is prohibited under Title IX of Public Law 92-318, and under many state laws as well (Healy, Lund, 1974). There is ample evidence that sex discrimination still persists, as one might expect after decades of discriminatory practices and structures. For example, a citizens' group in Massachusetts recently found clear evidence of sex discrimination in admission at regional vocational high schools and in course offerings within programs despite

state and Federal prohibitions (Mass. Advocacy Center, 1976). Blatant sex discrimination is only a small part of the problem, however; sex-role stereotyping cannot be eliminated by mandate. Even the former Commissioner of the Office of Education admitted, "There is more sex-role stereotyping in vocational education than in any other area" (cited in Verheyden-Hillard, 1975). Innovative programs and research projects have been undertaken to change sex-role stereotyping in vocational education, but progress is likely to be slow because internal as well as external barriers are operating.

Few studies have been undertaken to examine the characteristics of any influence on women enrolled in nontraditional, nonprofessional training programs. One important exception is the recent study by Kane (1976) which focused on women in 2 year post-secondary vocational education programs. Women from 94 schools in 26 states were involved in the survey; 860 were enrolled in nontraditionally female programs, 612 were in traditionally female programs, and 452 were in programs which are not strongly sex-stereotyped (the "mixed" group). Nontraditional students tended to be older and more urban than other students, but came from similar family backgrounds. The nontraditional women were asked to name persons who had been influential in their choice of occupation. The largest single group of influential educational persons were male vocational education teachers, but members of the women's family (mothers, husbands, and fathers) were substanttially more influential than teachers or counselors. This suggests that school personnel may be doing little to help women and girls explore the possibilities of nontraditional careers.

Sex discrimination and bias also exists in other programs and mechanisms designed to provide an entry into skilled blue-collar jobs. For instance, in Federally funded training programs such as Work Incentive and Job Corps, women are still primarily told about and trained for low-paying "female" work. Until 1974, most Job Corps centers were single-sex institutions, with strongly sex-stereotyped training opportunities. Coeducational centers are making it possible to obtain training in nontraditional careers, but only about one-third of all available training slots in the Job Corps are open to women (Neill, 1977), and most are still in secretarial training.

Apprenticeship opportunities have also been criticized for their sexism. The previously mentioned Women in Apprenticeship program in Wisconsin remains an isolated instance of an effort to expand apprenticeship training for women. According to the National Apprenticeship Information Program, a sizable number of women pass the tests required to enter apprenticeships. In addition to the tests, however, interviews with employers and union members are required by applicants, and they may be at a disadvantage if they encounter prejudiced interviewers. One representative of the program observed, "The interview counts for more than people think. If you're something different--your hair, your dress, or behavior--you'll be rejected" (cited in Sexton,1977). In most apprenticeship occupations women are clearly "something different".

In sum, it would appear that women have experienced, and continue experience, disadvantages in acquiring training and in gaining entry

into nontraditional blue-collar fields. However, there is considerable pressure for change, and perhaps in the future, more women will seek and have access to technical training.

Women and the Labor Movement

Historically, women have had little involvement in the labor movement in general, or with union participation and leadership. As of 1972, about 3.5 million women were members of unions or employee associations. This means that 16 out of 100 women workers, in comparison with 28 out of 100 male workers were in unions (Wertheimer, 1976). Nevertheless, the rate at which women have been joining unions was more rapid from 1962 to 1972 than in the previous 10 year period. The 1952 to 1962 period recorded a growth in female union membership of 6% compared with a 37% growth in the subsequent 10 years (Berquist, 1974).

The picture with regard to union leadership provides an even sharper male-female contrast. While 20.7 percent of all union members are female, fewer than 5% of all top elective and appointive offices in international unions are held by women. As Wertheimer noted, "Union power on a national level is by and large in the hands of male leaders on whom female members must depend to represent their interests" (1976-p. 194).

However, it does appear that some changes are beginning to occur. Women in blue-collar jobs are becoming increasingly aware of job discrimination and are demanding a larger role in union activities. Women in the trades have traditionally had to fight both employers and unions in their efforts for equality. Some trade unions have openly advocated discrimination against women on the job and within the union itself. The patterns of union discrimination were noted in the Report of the 20th Century Fund Task Force on Women and Employment: "Women are underrepresented in the leadership of trade unions, even in unions where a majority of the members are women. The jobs, occupations and industries where women form a large proportion of the work force are generally unorganized or underorganized. In general, unions reflect the interests, styles and preferences of working men, treating women at best as 'minority group' members" (Simmons et al., 1975, p. 115).

Established unions, such as the AFL-CIO, IUE and Auto Workers are beginning to acknowledge their need to support women's demands for equal consideration in the workplace. Many of these unions, for example, have endorsed the Equal Rights Amendment and many have also held special conferences directed at the major needs and problems of their female members (Raphael, 1974).

In addition, a number of "super unions" whose major concern is women workers have emerged in recent years. One of the largest of these organizations in the Detroit-based Coalition of Labor Union Women (CLUW) which held a 2 day conference in March 1974 attended by over 3,000 delegates from 58 unions. The statements and writings of groups such as this offer those concerned with the design and implementation of policies affecting women in the trades an

excellent perspective on issues which are of real concern to women workers. In addition to encouraging women in the labor force to organize and to take on leadership roles in unions, CLUW has set for itself as a major goal the elimination of sex discrimination from employers' practices and the active advocacy of further legislative action in the interest of women workers, such as child care assistance. In the skilled trades, these groups are particularly critical of exclusionary apprenticeship programs and industrial training programs. Olgar Madar, president of CLUW, has commented on the inadequacy of training for blue-collar women: "Managers, usually men, are saying they can't find women to do certain jobs, when at the same time there are manpower training programs with funds to train women" (Pospisil, 1975, p. 28).

Sex Discrimination and the Law

During the 1960s and 1970s, a number of federal and state laws prohibiting sex discrimination in employment were enacted. Ostensibly, such legislation has opened the doors to nontraditional fields for women. However, the implementation of such legislation is more problematic than its enactment; nor have women rushed forward en masse into nontraditional careers simply because a legal mechanism for entry into "male" occupations has been set in motion..

Until recently, law tended to contribute to occupational segregation on the basis of sex rather than to undermine or prohibit such segregation. With regard to the direct issue of employment in certain occupations, many states and municipalities had statutes restricting employment to males only. These legal limitations were generally related to occupational fields which were considered dangerous, such as police work or bartending. The military represents another area in which women have encountered legal barriers. Gates (1974) has noted, "In each of these fields, the laws and ordinances reinforced previously existing cultural patterns, and in some cases a sincere legislative intent to protect women from dangerous conditions can be inferred. In other instances it is less clear whose interests the law was designed to serve" (p.62).

In addition to legal prohibitions against employing women in certain occupations, there are or have been other laws which contribute indirectly to occupational segregation. In 1969, 46 states as well as the District of Columbia and Puerto Rico had legislation which limited in some way the hours which women (but not men) were permitted to work. The legal restrictions varied from state to state: some established an upper limit for number of hours worked in a day or in a week; others prohibited night work; still others stipulated the amount of time to be granted to women for rest periods (U. S. Department of Labor, 1969, 1976). Although these laws represent the fruits of efforts of social reformers to protect women from sweatshop conditions, the legislation has in many instances been used as an excuse for employers to restrict women from certain jobs. For example, one major company, while under fire from the Equal Opportunity Commission for its virtual total sex segregation of jobs, used state protective laws as its primary base of defense.

The first important federal measure aimed at prohibiting sex discrimination in employment was the Equal Pay Act of 1963. This legislation was enacted as an amendment to the Fair Labor Standards Act of 1938 and prohibits differential pay rates for the same work on the basis of sex. The coverage of the Act was extended in 1972 to include previously exempted professional, administrative, executive,and technical employees, as well as state and local government employees. The key phrase of this act -- "equal work" -- has been interpreted rigorously in courts. In the landmark case of Shultz v. Wheaton Glass in the Third Circuit Court of Appeals, the following decision was rendered: "Congress in prescribing 'equal' work did not require that the jobs be identical, but only that they must be substantially equal. Any other interpretation would destroy the remedial purpose of the Act" (cited in Simmons et al, 1975, p. 88).

The most important piece of federal legislation barring sex discrimination in employment is Title VII of the Civil Rights Act of 1964. This legislation proscribes discrimination in any term or condition of employment on the basis of sex,as well as race, color, national origin and religion. Title VII was strengthened by amendments passed in 1972 to apply to most employers in both the private and public sectors, with the exception on the military services. An employer covered by Title VII is prohibited from discriminating against either sex in hiring or firing, wages, terms, conditions or privileges of employment, and training or retraining. A labor union, employer or joint labor-management committee supervising training or apprenticeship programs cannot advertise discriminatory specifications, limitations or preferences for training, referral, or employment.

Title VII does have one important exception: an employer may be justified in discriminating on the basis of sex if gender is a bona fide occupational qualification (BFOQ) required for the successful performance of the job. Examples of occupations for which sex is a BFOQ include wet-nurse or actors and actresses hired to play specific roles. Companies attempting to use the BFOQ exception as a basis for the continuance of discriminatory practices have for the most part been unsuccessful in courts. For example, in one case, the company argued that women were excluded from certain jobs because of weight-lifting requirements. After hearing detailed medical testimony, the court ruled that selecting applicants for the job in question on the basis of sex was unlawful inasmuch as at least 25% to 90% of women could do the work (Simmons, et al., 1975). In an important decision which strengthened a narrow definition of the BFOQ provision, the Court of Appeals for the Ninth Circuit said, "Sexual characteristics, rather than characteristics that might, to one degree or another, correlate with a particular sex, must be the basis for the application of the BFOQ exception" (Simmons, et al., 1975, p. 95).

A third piece of relevant legislation is Executive Order 11246. which prohibits Federal contractors and subcontractors from discriminating in employment on the basis of race, color, religion or national origin. This order, issued in 1965, was amended by Executive Order 11375 in 1968 to include discrimination on the basis of sex. The order covers all contractors who have $10,000 or more in Federal

construction or other Federal contracts, including universities. It was not until 1971, however, that specific regulations calling for affirmative action plans and timetables for women employed by Federal contractors were established. These regulations, known as Revised Order No. 4, require a contractor to analyze its work force to establish numerical goals and timetables by organizational unit and job classification to correct previous inequities or imbalances.

Within the past decade, legislators have developed potentially powerful mechanisms for "desegregating" the workforce and for expanding women's opportunities in nontraditional careers. It is too early to assess whether or not these legal measures will have a profound effect on occupational segregation by sex in the workforce. The laws continue to be violated by employers, and, undoubtedly, many women are unaware that the legislation exists. Nevertheless, women are increasingly demanding their rights under these laws through complaints, formal grievance procedures and litigation. In the first year of operation of Title VII, approximately 2,000 complaints of sex discrimination were filed with the Equal Employment Opportunity Commission. By 1973, about 34,000 such complaints were filed (Wallace, 1976). Several landmark court cases have demonstrated that noncompliance can be quite costly. One major company, among the largest private employers in the country, signed a consent decree in 1973 for back pay and wage adjustments, which ultimately cost the company in the vicinity of 70 million dollars. Despite these traumatic cases, enforcement of the anti-sex-discrimination laws has been uneven. A final evaluation of the effectiveness of the legislation will require considerably more data than are currently available.

In conclusion, it can be said that our society is in the process of re-defining what is "women's work" and "men's work." It is too soon to predict whether occupational segregation on the basis of sex will be vastly reduced or eliminated as a result of the process, but important changes appear to be inevitable. Skilled industrial fields may be more resistant to change than male-dominated white-collar fields, but a variety of indicators appear to demonstrate that the skilled trades are also vulnerable to the forces of social change.

SEX DIFFERENCES IN ABILITIES/APTITUDES

The following paragraphs discuss the issue of sex differences in aptitudes relevant to successful training in industrial careers. The basic aptitudes which run through the skilled trades are spatial and perceptual motor ability, mathematical and problem solving ability, mechanical abilities, and strength. A review of explanations for sex differences in abilities will also be presented.

Spatial and Perceptual Abilities

The few existing studies on preschool subjects suggest that there are no sex differences in spatial abilities of young children (Gesell, 1940; Koch, 1954), but there are so many difficulties associated with preschool tests and so few studies that it is difficult to assess these findings. At any rate, by the age of 6 or 7, the superiority of boys seems to be clearly established, and this superiority is maintained throughout the school years and adulthood. On the Stanford-Binet, for example, boys were found to score significantly higher on the subtest involving block counting from pictures, directional orientation and plan of search (McNemar, 1942). Several studies report male advantage on maze tests (Mellone, 1944; Porteus, 1918). Virtually all reported studies in which multiple factor batteries, such as the Differential Aptitude Test or the Primary Mental Abilities, are administered have found that males excel on the spatial factor (Bennett, et al., 1959; Havighurst and Breese, 1947; Herzberg and Lephin, 1954; Hobson, 1947; Wesman, 1949; Trumbell, 1953). The General Aptitude Test Battery (GATB) is administered to adults by the U.S.Employment Service. As in the case of younger samples, men have been found to perform significantly better than women on the spatial reasoning subtest of this battery (Hedges & Bemis, 1974). The evidence is thus quite consistent that males excel on tests of spatial ability. Although sex differences in spatial abilities are consistently significant, the overlap in the distributions for the two sexes is extensive (as is the case for all sex-related differences in abilities). Research by the U.S. Employment Service has indicated that spatial reasoning is important for many skilled blue-collar occupations. But in only one trade does the level of spatial ability required exceed the average score for an employed worker. Studies of senior high school students have revealed that 67% of the boys and 62% of the girls equal or exceed this average (Hedges, Bemis, 1974).

In contrast to spatial abilities tests, females have demonstrated a tendency to outperform males in simple perceptual-motor tasks from a very early age. Staples (1932), for example, found that infant girls exceed boys in speed of color naming. While perhaps early verbal facility in girls complicates this finding, Stroop (1935) found this same sex difference on a similar task with a group of adults.

Tests of clerical aptitude, which require rapid perception of details and frequent shifts of attention, generally tend to favor females. Petterson and Andrew (1946) in the Manual for the Minnesota Vocational Test for Clerical Workers found a female advantage to be present from the fifth grade on through high school. Females also excel on the digit symbol subtest of the Wechsler tests (Norman, 1953;

Miele, 1958; Wechsler, 1958).

As adults, women continue to perform better on perceptually related tasks. On the GATB used for job applicants applying to the U.S. Employment Service, women do better than men on the following subtests: form perception, clerical perception, motor coordination, and finger dexterity (Hedges and Bemis, 1974). Similar results have been obtained in studies by the Human Engineering Laboratory of the Johnson O'Connor Research Foundation dating back to 1922. On tests administered in these studies, men had a higher performance than women on structural visualization, while women did better than men on abstract visualization, finger dexterity, and observations. While female superiority in perceptual-motor abilities has often been used as the justification for placement of females in clerical or unskilled operative jobs requiring fine manual movements, it would appear that perceptual discrimination and manual dexterity are highly relevant to the performance of many skilled trade jobs as well.

Quantitative and Problem-Solving Abilities

There is some evidence that girls learn to count at an earlier age than do boys (Gesell, 1940; McNemar, 1942), but this ability is undoubtedly related to superior verbal facility. Through the school years, tests of computation generally reveal either no sex difference or a slight difference in favor of girls (Clark, 1959; Bennett et al, 1959; Stroud, 1942; McGuire, 1961; Hobson, 1947; Herzberg and Lepkin, 1954; Wozencraft, 1963).

In the solution of arithmetic problems and in arithmetic reasoning, boys have been found to be superior to girls beginning in about the fifth grade, with the differences becoming most clear-cut and quite substantial at the high school level. In two separate studies using 8-year-old students, Clark (1959) found that boys surpassed girls on the numerical reasoning subtest of the California Test of Mental Maturity, while Wozencraft (1963) found that the girls in her sample outperformed boys on the arithmetic reasoning subtest of the Scholastic Aptitude Test. Studies in which students in the 9 through 12 year age range have been tested have generally found few differences in numerical reasoning (Miele, 1958; Clark, 1959; Wozencraft, 1963; McGuire, 1961). Beyond this age range, however, males excel fairly consistently. McNemar (1942) reported that in the 1937 standardization sample, males (aged 11 through 18) were superior on tests of arithmetic reasoning, induction, and ingenuity, all of which involve numerical reasoning skills. Bennett, et al (1959) also indicated higher norms for males on the numerical reasoning section of the DAT. Among college age and adult groups, the evidence for male superiority in mathematical reasoning is rather extensive (See, for example, Miele, 1958; Osborne, Sanders, 1954; Bieri, et al., 1958; Fishman, 1957), although no sex differences were found among job applicants on the numerical reasoning subtest of the GATB by the U.S. Employment Service (Hedges, Bemis, 1974).

With regard to abilities related to quantitative aptitude, such as analytic reasoning and problem solving skills, males have generally been

found to outperform females (Carey, 1958; Guetzkow, 1951; Kostik, 1954; Maccoby, 1966; Milton, 1957, 1959; Graff and Riddell, 1972; Nakamura, 1958). In contrast to these reports,the results of the series of studies conducted over the past 50 years at the Human Engineering Laboratory indicate no sex differences on tests of analytic reasoning or inductive reasoning.

In sum, although the data are not perfectly consistent, the evidence suggests that clear sex differences in favor of males exist on tests of quantitative aptitude, analytic reasoning,and problem-solving skills.

Mechanical Aptitude

There are consistent data that boys surpass girls on tests of mechanical aptitude and related skills. For example, in two separate studies involving subjects in the 12-15 year-old range, Wesman (1949) and McGuire (1961) reported higher scores for males on the DAT mechanical subtest. Bennett and Cruikshank (1942) found considerable sex differences amoung adults and high school students in favor of males on the Bennett Test of Mechanical Comprehension. Peterson (1930) reported findings which favored 12th grade males over females on the Minnesota Assembly Test. In a research project funded by the Ford Foundation on general vocational capabilities, Altman (1966) found large sex differences in favor of males in vocational areas designated as mechanical, spatial, chemical and electrical.

Data from military enlistees add further documentation to the higher performance of males on mechanical aptitude and related tests. Fuchs and Hammer (1963) reported on the test results of 1,412 male and female Army enlistees in five aptitude areas. Substantially more men than women obtained a score of 90 or higher (prerequisite scores for training courses) in Electronics, General Maintenance, and Motor Maintenance subtests of the Supplementary Qualification Battery. Studies by the Air Force Human Resources Laboratory have shown that female basic trainees in the Air Force have, during the 1970-to-1973 period, improved their scores on the Mechanical and Electronics subtests of the Airman Qualifying Examination (AQE), despite the fact that male scores on these subtests were declining during the same period. Females did, however, continue to score substantially lower than males on both subtests, particularly on the Mechanical subtest. Nevertheless, 17% and 39% of the women in 1973 scored above the male mean on the Mechanical and Electronics tests, respectively, indicating aptitudes which might profitably be tapped.

Anastasi (1968) has observed that mechanical aptitude tests cover a variety of functions, but that mechanical reasoning and sheer mechanical information predominate in most mechanical aptitude tests. For example, Bennett's Test of Mechanical Comprehension, which has been shown to have good predictive and concurrent validity in terms of training and job proficiency criteria in mechanical trades and engineering, has a large component of mechanical information which girls in our society have limited opportunities to acquire.

Possible Explanations for Sex Differences in Aptitude

The research reviewed in this section shows rather clearly that for certain types of aptitude, as measured by current tests, there are consistent differences between the average performance of the two sexes. Various theories have been advanced to explain these differences. As one might expect, these theories can be roughly classified into two groups, i.e., those that emphasize biological or hereditary factors and those that emphasize cultural or learned factors.

Among the hereditary/biological explanations are theories which emphasize maturational differences between girls and boys, genetic factors, and hormone-related effects. Several investigators have presented evidence in support of the hypotheses that both quantitative and spatial abilities are traits which, like red-green color blindness amd hemophilia, are sex-linked and recessive. The evidence is based mainly on correlations between children and their parents on measures of these abilities. If the sex-linked gene theory were correct, there should be a positive relationship between mothers and sons but not between fathers and sons (because the recessive X chromosome is transmitted by the mother) on tests of quantitative and spatial aptitude. There should also be a positive relationship between daughters' and parents' abilities, but a greater father-daughter correlation would be expected. Stafford (1961, 1972) has presented some parent-child correlations which are consistent with this theory. However, findings from research done on women with Turner's syndrome (women with X-chromosome abnormalities) conflict with predictions based on the genetic theory of sex differences in abilities (Garron, 1970). With regard to the theory based on hormone-related effects, a considerable amount of supporting data have been gathered, although virtually all the evidence is based on studies with lower animals (See Broverman et al, 1968). In sum, there are some data in support of biological theories of male-female differences in aptitudes, but the evidence is yet rather meager.

In the present social climate, environmental or "nurture" theories of sex differences have received considerable empirical and conceptual attention. The underlying assumption of these theories is as follows: From the day an infant is born, its sex determines the kinds of experiences to which it is exposed. In turn, these different experiences result in the strengthening of different talents and skills, which show up on tests as sex differences in aptitudes.

A fairly broad group of theories with a "nurture" emphasis holds that sex differences in abilities are related to the child's modeling of or identification with significant others. The main version of this theory contends that sex differences are due to same-sex role modeling. That is, girls may be more verbal and boys more quantitative because children tend to model themselves primarily upon the same-sex patent. A related theory based on the concept of identification has been most fully developed in the context of mathematical abilities. This explanation, known as the masculine-identification hypothesis, maintains that mathematics is an aggressive, masculine discipline, and that both males and females with strengths in this area identify with their

fathers or other male figures. Evidence in support of this hypothesis generally comes from studies relating father absence to patterns of verbal and quantitative ability (for example, see Carlsmith, 1964; Land, Rosenberg, Sutton-Smith, 1969; Maccoby, Rau, 1962; Milton, 1957).

Another group of explanations for sex differences in ability holds that, because child rearing practices in our culture differ so greatly for the two sexes, boys and girls have differential exposure to opportunities to learn or develop certain skills and abilities. This hypothesis is used to explain male superiority in spatial, analytic and mechanical tasks. It is suggested that the male advantage in these abilities is related to their greater opportunity to explore the environment in the early years and to manipulate objects. The underlying notion of differential learning opportunities has some appeal to common sense, but there is little or no empirical evidence in support of this explanation of sex differences.

Another explanation for observed sex differences in ability is that boys and girls are positively reinforced for, and consequently become interested or proficient in, those kinds of skills that are relevant to their sex role, as society defines it. For example, boys are usually more positively reinforced for mathematical endeavors than are girls because their parents and teachers expect that they may some day become doctors or engineers or scientists. Girls, on the other hand, are not similarly encouraged because there is not as great an expectation that they will need math. (In fact, they may be negatively reinforced for showing too "unfeminine" an interest in numbers.) Studies which have examined the relationship between attitudes toward and aptitudes in various areas have found reasonably high correlations (e.g., Aiken, 1974; Carey, 1958). However, this evidence, while supportive of the theory of reinforcement of sex-typed interests, is hardly conclusive since it is impossible to untangle the directionality of the influence.

A final theory among the "nuture" group of explanations regards sex-typed personality traits as the mediators of sex differences in ability. This theory begins by noting that there are important sex differences in certain personality traits such as conformity and dependency. The personality differences are generally thought to be the result of differential experience, such as differential (sex-typed) reinforcement, but the possibility of biological determinants of personality is, of course, not ruled out. The personality traits, in turn, have been shown to be substantially related to intellectual functioning. Maccoby (1966) has argued that it is these sex-typed personality attributes that act as a mediating process in cognitive style and performance. There are various kinds of evidence in support of this theory, such as Campbell's (1966) study of declining IQ in adolescent girls and Nakamura's (1958) findings of an inverse relationship between conformity/dependency and analytic ability. Further research is, however, clearly needed.

In sum, there is considerable evidence that males and females differ in their abilities. The abilities reviewed in this section were all felt to be relevant to performance in skilled industrial

occupations. As we have seen, more males than females appear to excel in these abilities. However, two additional points were discovered. First, that the overlap in the male and female distributions of ability tends to be high, so that many females have more ability in spatial, quantitative and mechanical tasks than the average male. Secondly, there is some evidence that some of the six differences may be attributable to environmental factors. Therefore, social change with regard to sex-role stereotyping may reduce sex differences in these ability areas.

Strength

Before concluding this section on sex differences in abilities, it seems appropriate to examine differences in an attribute which is important in most skilled trades, and that is strength. The U.S. Department of Labor has established standards of strength required in the performance of various jobs, including skilled blue-collar work. Despite the fact that men are clearly stronger than women, sufficient data are not available concerning the ability of the average man or woman to meet the physical demands of these jobs. Many of the skilled trades require only "light strength," defined as the ability to lift a maximum of 20 pounds and occasionally lift up to 50 pounds. Physical requirements of this sort are probably well within the capability of many, if not most, women. The increasing availability of machinery to do heavy lifting and transporting is helping to remove the barrier of strength prerequisites for women entering the skilled trades.

SEX DIFFERENCES IN JOB-RELATED ATTRIBUTES

A number of studies appearing in the literature which describe sex differences (or lack of sex differences) relating to such job-related attributes as turnover, absenteeism, overtime behavior, job performance, leadership ability, and job satisfaction. Most of these reports are (a) case studies, describing the experience in one organization; (b) economic analyses, drawing on data from the census or other individual-based data sets; or (c) experimental, laboratory-type research. None of the studies examined made any attempt to link organizational policies with employee outcomes. Most of the studies also fail to differentiate between the white- and blue-collar workers. When only one class of worker was included in the study, it was more often white-collar than blue-collar employees, particularly in the case of reports dealing with job performance and leadership ability. Despite these shortcomings in the available literature, a review of the existing studies was considered appropriate for this technical report. The review will help to identify important areas of managerial concern relating to sex differences in the workplace.

Turnover and Tenure

A widely held belief about female workers is that they have higher rates of voluntary turnover than males. The stereotypical female employee is one who places home and family before career and whose worklife is therefore characterized by interruptions and frequent quittings rather than stability and continuity (Oppenheimer, 1970; Simmons, Freeman, Dunkle and Blau, 1975). This perception has important implications for the differential treatment of employees. Any group which is perceived to have high quit rates is judged to be a poor risk for training programs, promotion, or jobs with considerable responsibility. Therefore, discrimination in the hiring, training and advancement of women is sometimes justified on the grounds that organizations must seek to protect themselves by hiring those workers who have the longest expected tenure.

Discussions of this issue are unfortunately far more abundant than empirical facts (See, for example, Flanders, Anderson, 1973; Gross, 1971; Kreps, 1971). The available data suggest that the relationship between sex and tenure is not a simple one.

A report by the U.S. Civil Service Commission (1963) revealed that, among full-time employees working for the Federal government, women had a higher turnover rate than men, on the average. However, the study also found a relationship between sex and job-level on the one hand, and job-level and turnover on the other. Women employees tended to cluster in low-grade jobs where high quit rates where characteristic of both male and female workers. Variables such as age, grade level, and type of job were found to be more predictive of job success and tenure than sex.

Flanagan, Strauss and Ulman (1974) used data from the 1958 to 1972 period based on surveys from the Bureau of Labor Statistics to

examine the relationship between quit rates and the demographic composition of the work force. The regression results disclosed that the proportion of females in the work force had a large effect in raising quit rates in durable goods industries. This analysis unfortunately did not control for or examine income levels or occupation-type, both of which are correlated with sex and quit rates.

Mattila (1974) analyzed trends in differential turnover rates and also examined sex differences in reasons for quitting. With regard to trends, Mattila examined quit rate data from manufacturing industries collected by the Bureau of Labor Statistics between 1950 and 1968. After plotting the female-to-male quit ratio against the national unemployment rate, it was found that female quit rates were nearly twice as high as those of males during economic recessions, but were nearly equal during periods of full employment. A multiple regression analysis revealed further that a decrease in the unemployment rate from 7% to 4% would lower female turnover, relative to male turnover, by over 50 percentage points. Mattila found conflicting evidence with regard to whether total female quit rates always exceed male rates. The Bureau of Labor Statistics data cited above showed a female/male quit ratio in excess of 1.0 in all years of their surveys, while data from the Census Bureau revealed a ratio of .67 in manufacturing 1955. Whatever the source of this discrepancy, the evidence suggests that female/male turnover rates are a cyclical phenomenon and that few sex differences exist during periods of high employment. This conclusion was also supported in another study by Barnes and Jones (1973).

Another set of analyses by Mattila (1974) sheds some light on a possible explanation for such a trend. Workers leave jobs voluntarily by either moving to other jobs (or unemployment) or by withdrawing from the labor force altogether. Data from two Census Bureau surveys from 1955 and 1961 are available concerning workers' reasons for leaving jobs. Mattila categorized the reasons for quitting into two groups: (a) job improvement and (b) withdrawal from the labor force for non-market reasons. An analysis of female/male quit ratios for the two groups revealed that women were considerably more likely than men to quit for job improvement reasons.

This finding is significant in that it reveals a source of stability among female employees which is largely unrecognized. Furthermore, the distinction between two kinds of motives for quitting is important in light of evidence of secular as well as cyclical influences on female quite rates. Armknecht and Early (1972, 1973) performed an analysis which suggests that even after controlling for cyclical economic variation, the trend has been in the direction of women exhibiting lower-than-average propensities to quit. Armknecht and Early argued that, due to the large reduction in women's turnover rates for withdrawals from the labor force, the current controlling influence is quits for job improvement reasons. Since men currently have a greater tendency than women to quit for this reason, these economists concluded that the presence of women in an industry had a depressing influence on the quit rate rather than their former elevating effect. Their analysis was consistent with this interpretation.

The stability of female employees who remain in the labor market was further demonstrated in a study by Steinberg (1975), who made use of data from the Social Security Administration's Continuous Work History Sample. The focus of the investigation was what Steinberg called "attachment patterns." Looking at employees who were working both in 1965 and 1970, it was found that women were considerably more likely to be "firm stayers" (stayed with the same employer over the 5-year period) than men. Among those workers earning $3,000 to $5,000 in 1965, 53.7% of the females and 38.5% of the males were working for the same organization. This same study revealed another interesting relationship. For both male and female workers, attachment rates were substantially higher among those who earned $5,000 to $7,000 than among those who earned $3,000 to $5,000. This finding brings the discussion full circle to the original point that any relationship between sex and quit rates might be largely a result of the relationship between sex and income or type of occupation.

An interpretation for these disparate findings is that, as women move into jobs with better pay and status, the opportunity cost of quitting a job for nonmarket reasons becomes increasingly higher. As a result of the fact that women tend to be less willing to leave a job to secure a better position, the male-female differences in quit rates have virtually disappeared. There is even some evidence that, in years of high employment at least, male quit rates will be higher than that of females. However, expansion of opportunities for women might eventually result in elevating the frequency with which women will take risks in quitting to find better employment.

Absenteeism

Absenteeism represents another behavior which is costly to employers, and which is believed to characterize women to a greater degree than men. Published information relating to this issue is not, however, abundant nor is it consistent.

A survey conducted by the Public Health Service found that, during 1967, women workers lost an average of 5.6 days from work because of an injury or illness, while men lost 5.3 days. The 1972-73 Quality of Employment Survey also found negligible sex differences in self-reported absenteeism from work (Quinn & Shepherd, 1974). The large-scale study conducted by the Aetna Life Insurance Company found that the absence rates for men and women in technical, managerial and supervisory jobs were virtually identical (cited in Meyer & Lee, 1976).

The Bureau of the Census collects absenteeism data monthly as part of the Current Population Survey of households. Hedges (1973) examined trends in these data over the 1967-1972 period. An analysis of absenteeism by sex revealed that, in March of 1972, 6.3% of the women and 3.3% of the men reported a part-week absence from work for the week preceding the interview. For this same time period, 2.8% of the women and 2.1% of the men were absent the entire week. Hedges points out that this finding should be considered with other facts. Women are more likely to be new-hires and are more likely to be working in lower skilled, lower paid jobs where absenteeism tends

to be high for both sexes. The sex differences in absence rates diminish when comparisons are made for a particular occupational group.

Flanagan, et al. (1974) analyzed via regression analysis the influence of demographic characteristics on interindustry absences. That is, variations in unscheduled absences among various industries were predicted on the basis of age, sex, and race composition of the work force. The data were collected by the Bureau of Labor Statistics during 1972. The results indicated that absence rates tended to be higher in industries where the percent of females was relatively high, but that the impact was relatively small.

In summary, the evidence concerning absenteeism suggests that women tend to have higher rates than men, but typically the obtained differences are small. Furthermore, it would appear as though sex differences in absence rates are confounded by sex differences in occupation and income.

Overtime and Hours of Work

One would anticipate that female employees, who are more likely than males to have major childcare and household responsibilities in addition to work responsibilities, would be less willing to accept overtime work and to be less satisfied with their hours of work. There are some empirical findings supporting both of these conjectures.

Fottler and Schaller (1975) examined the relationship between employee overtime acceptance and a number of independent variables among blue-collar hourly workers in a northeastern printing company. Employees were classified into four categories based on the percentage of time they accepted overtime when it was offered (0 to 25%, 26% to 50%, 51% to 75% and 76% to 100%). The findings revealed a statistically significant relationship between employee sex and overtime acceptance among married employees, but not among single employees. Married males exhibited the highest rates of overtime acceptance, followed by single males, married females, and single females. Significant sex differences were still obtained when skill level was controlled for by examining data for lowest level workers only. However, it should be pointed out that there were no women employed in high pay, high responsibility jobs in this company. Therefore, it seems possible that a contributing factor to the overtime acceptance behavior of this sample was the women's perception that advancement via cooperation in working overtime was impossible.

The 1972-73 Quality of Employment Survey asked several questions relating to working hours and time-related problems, but unfortunately few of the results were presented separately by sex. In response to the question, "Could you tell me what problems or difficulties you run into concerning the hours you work, your work schedule, or overtime?", 41.8 percent of the males and 35.3 percent of the females reported some type of problem. The nature of the problems was reported only for the sample as a whole. The most frequently mentioned complaints were the time slot (i.e., having to start work too early or leave too late) (24.9%) and interference of work schedule with family life (23.7%). One might surmise that women would be especially likely to mention the second problem.

New policies regarding working hours are currently being experimented with in both private and public sectors. Rearranged working schedules such as the 4-day workweek, flexible work schedules, and permanent part-time work are becoming increasingly common. While little empirical evidence is available, there is considerable consensus that women as a group stand to benefit the most from greater flexibility in scheduling (Polit, 1978). Therefore, it may be expected that, as greater numbers of employees are given such flexibility, and also as women are given greater opportunities for advancement, scheduling problems will be less burdensome to female employees.

Job Satisfaction

The degree to which men and women find their employment experiences satisfying has been investigated by a number of researchers. It might be predicted that women would be less satisfied than men based on women's generally lower occupational status, income, and opportunities for advancement. On the other hand, since labor force participation has historically played a more central role in the lives of males in our society than females, it might be predicted that men might be more sensitive to problem areas at the worksite and might therefore be less satisfied than women who, according to the stereotype, are not very committed to their jobs. As in other areas, the data concerning sex differences in job satisfaction are inconsistent. Numerous intervening variables probably account for the discrepancies.

Findings from the 1972-73 Quality of Employment Survey revealed few major sex differences among the various measures of job satisfaction used in that study (Quinn & Shepherd, 1974). Male and female workers in this investigation were about equally satisfied with their relations with coworkers, with "facet-free" aspects of their job and with "facet-specific" aspects. The term "facet-free" was used by the researchers to refer to questions which did not refer to a specific facet or aspect of a job, while facet-specific job satisfaction was the average of responses to questions dealing with particular job facets. Male respondents expressed a slightly[3] higher level of satisfaction with the following dimensions of their jobs: challenge of the work (male mean = 3.24, female mean = 3.03); financial rewards (male mean = 3.17, female mean = 2.99); and promotion opportunities (male mean = 2.74, female mean = 2.45). On the other hand, the women workers expressed a slightly higher level of satisfaction with the comfort aspects of their job (male mean = 2.99, female mean = 3.10) and with the resource adequacey of their jobs (male mean = 3.3, female mean = 3.35). An overall index of job satisfaction was computed by combining 38 questions and then standardizing the measure to have a mean of 0.0. Males as a group had an average score of 2 on this overall job satisfaction measure. Women who were the primary or sole wage earners had an average score of 5, while those women who were secondary wage earners had a

[3]The authors did not report significance levels nor sufficient information to perform statistical tests.

score of -9. In summary, the results of this large-scale national survey revealed few striking sex differences in the various aspects of job satisfaction. The woman's reason for working appears to have influenced her responses, but status and income were not controlled in these analyses. The sex differences were greatest in those aspects of the job in which discrimination against women is purportedly the greatest.

A similar relationship has been observed in a study by Levitin, Quinn and Staines (1971). This investigation was a secondary analysis of the 1969 University of Michigan Survey of American workers (This survey was the predecessor of the Quality of Employment Survey). Levitin and her associates used standard "achievement criteria" such as educational attainment, tenure with an employer, amount of supervisory responsibility and occupational prestige to develop a prediction equation for male income and male scores on an index called "Quality of Work." This measure summarized 70 questions dealing with how good a worker's job was in terms of health and safety, hours, job security, job content, and so forth. The prediction equation was then used to compute discrepancies between women's achievement criteria on the one hand and income and Quality of Work on the other, to develop an objective, quantitative measure of sex discrimination. The authors found evidence of sex discrimination favoring men in both areas of occupational rewards. They also found that job satisfaction was related to the measures of discrimination. Discrepancy scores were significantly related to both overall job satisfaction and with job satisfaction on the specific dimensions of comfort, challenge, financial rewards, relations with coworkers, and resources. In other words, women who were more discriminated against in terms of the quality of their jobs reported less job satisfaction than did other women. Income discrimination was only associated with lowered satisfaction on the financial rewards dimension.

Sex differences in job satisfaction have also been found to interact with a number of background variables. Weaver (1974) analyzed job satisfaction data from a 1972 survey conducted by the National Opinion Research Center. A national probability sample of over 700 persons was used to classify respondents as either basically satisfied or unsatisfied. Overall, males (86.4%) were somewhat more likely to report job satisfaction than females (83.9%). This difference is accentuated when financial satisfaction is taken into account. Among those respondents who reported that they were "not at all satisfied" with their general financial situation, 71.3% of the men and 64.2% of the women said they were dissatisfied with their jobs. The sex difference in job satisfaction virtually disappeared among those respondents who were satisfied with their financial situation. Race was found to be another important intervening variable. Whereas the group with the highest percentage of satisfied workers was the white male group (87.7%), black women expressed the least amount of job satisfaction (77.2%). Weaver's analysis revealed that occupation type also had an impact on the job satisfaction measure. Male professional, technical, or administrative workers were substantially more likely to be satisfied than females in the same occupational group (91.4% for males, 79.6% for females). The converse was true for clerical workers,

an occupational area in which women reported more satisfaction. The sex differences for craft and kindred workers were negligible. Finally, age exerted an influence on expressions of male and female job satisfaction. Age did not have a linear effect on sex differences. Males were considerably more satisfied than females in the 20 to 30 age group, slightly less satisfied than females in the 30 to 40 age range, substantially more satisfied in the 40 to 50 age group, and somewhat less satisfied than females among workers over 50. Differences between the two sexes were greatest among workers in the 40 to 50 age range. A full 89.2% of the men in this age group reported satisfaction with their jobs, compared to 69.2% of the females.

The finding that job satisfaction differences between the sexes were more pronounced among professional than nonprofessional workers was repeated in a smaller-scale study by Shapiro and Stern (1975). These investigators obtained job satisfaction scores on five dimensions for a sample of professional (N=68) and nonprofessional (N=134) workers. Nonprofessional women were found to be somewhat more satisfied with their pay than nonprofessional men, but the reverse was true in the professional sample. This same interaction pattern was obtained with regard to satisfaction with supervision and satisfaction with coworkers. Females in both the professional and nonprofessional group were somewhat less satisfied than males with the work itself and with promotion opportunities.

In sum, the differences in job satisfaction between men and women have usually been found to favor men, but the differences are typically quite small. Women who are discriminated against -- based on objective achievement criteria -- have been found to express lower levels of job satisfaction. The sex differences interact with such variables as occupational type, financial satisfaction, race, and age.

Job Motivation

A commonly held belief is that men and women are motivated to work for different reasons (Laws, 1976; Schein, 1972). This popular assumption was reinforced by the work of Herzberg, Mausner and Snyderman (1959), who distinguished between intrinsic job motivators (those job characteristics which satisfied the worker's need for self- actualization and self-realization) and "hygienes" or external job characteristics such as wages, security, interpersonal relations, and working conditions. Herzberg and his associates concluded that intrinsic factors were more important to men than to women. Several empirical investigations have failed to support this assertion.

Burke (1966a, 1966b) had samples of male and female college students rank 10 job characteristics in order of importance for self and in perceived order of importance for the opposite sex. The job characteristics consisted of five intrinsic motivators (challenges ability, high responsibility, voice in decisions, importance of the job, and opportunities for advancement) and five extrinsic motivators or "hygienes" (good boss, good physical working conditions, good salary, job security, liberal fringe benefits). The results indicated that both males and females ranked the intrinsic motivators more highly than "hygienes" in

terms of "importance for self." The rank orders correlated .83 and .84 in the two studies, demonstrating a high real similarity. Female subjects correctly predicted that males had similar preferences: the female rank order for the opposite sex and actual male rank order for self correlated .89. However, males incorrectly predicted that females placed more stress on extrinsic job factors, resulting in a correlation of -.12 for the relationship between the male students' rank ordering for the opposite sex and the female students' rank ordering for self.

Centers and Bugental (1966) conducted a similar investigation with a large cross-sectional sample of the working population in a major urban area. Respondents were presented with a card showing three intrinsic (interesting work, use of skills, work gives satisfaction) and three extrinsic (pay, good co-workers, job security) factors and were asked to choose which of them was first, second, or third in importance to them. A strong job-level influence was detected: at higher occupational levels intrinsic components were more highly valued, while at lower occupational levels extrinsic factors were considered important. In general, there were no sex differences found in the value placed on intrinsic and extrinsic factors. The two factors on which significant sex differences occurred were those of "coworkers" and "use of skills," or self-expression. Fifty-one percent of the men and 43% of the women chose self-expression as one of their first three choices. By contrast, 50% of the women and 36% of the men chose coworkers as one of the top three factors. Unfortunately, these researchers made no attempt to control for occupational level in their analysis of sex differences.

Saleh and Lalljee (1969) took occupational levels or status into account in examining sex differences in job motivation by looking at three distinct samples. The first sample consisted of 84 university students. Both female and male students selected intrinsic factors more often than extrinsic factors. No sex differences were found in the second sample of 101 public school teachers, who chose extrinsic and intrinsic factors about equally, the third sample consisted of 402 employees from a technical division of a large service-oriented corporation. When education and job level were controlled, there were no differences in job motivation. Like the Centers and Bugental (1966) study, the results indicated that higher job levels were associated with more empnasis on intrinsic job factors, regardless of sex.

Data from the 1972-73 Quality of Employment Survey (Quinn and Shephard, 1974) contribute additional evidence that sex differences in job motivation are virtually nonexistent. The job motivation index used in that study was a composite of responses to three questions dealing with "aroused motivation on the job from the standpoint of devotion of energy to job tasks." In other words, this index is tapping a dimension more closely related to job commitment than to identifiable motivators. In any event, the sex differences on this index were quite small: the mean for males was 3.01, for females who were primary or sole wage earners the mean was 2.98, compared to a mean of 2.86 for women classified as secondary wage earners.

The Wisconsin "Women in Apprenticeship" program collected some information on motivation from 157 of the women enrolled in the program by means of a questionnaire survey. These women entering non-traditional blue-collar fields were asked the following question: "What was the one main factor that led you to become an apprentice?" Fewer than 15% of the respondents gave "financial security" as their answer. The most typical response, given by nearly 60% of the women, was their interest in trade skills. When asked whether they considered the work personally rewarding, 98.7% of the sample responded affirmatively. Employers participating in the demonstration program were also surveyed and asked their perceptions of the female apprentices' motivation. The great majority of employers (78%) rated on-the-job motivation of the women as the same or higher than other employees (Mapp, 1973).

In summary, there is little evidence to support the commonly held belief that women are less committed to their work than men, and are motivated by a completely different set of factors. Women, like men, work for income and also for self-actualization and the interest value in the job itself. Like many other attributes we have examined, occupational level appears to influence motivation to a greater degree than sex alone, although these variables are often correlated.

Job Performance

An important aspect of an employee's work behavior is his or her on-the-job performance or productivity. Despite the great interest which administrators might be expected to express in learning about sex differences in job performance, there is surprisingly little information on this topic in the literature. These data presumably exist in many organizational records but it is perhaps too sensitive a topic to receive adequate public coverage.

The information that is available is too sporadic and subjective to warrant even tentative conclusions. A survey of employers conducted in conjunction with the Wisconsin "Women in Apprenticeship" program indicated that two-thirds felt that females make equally good employees in the shops as males (Mapp, 1973). Some interesting unpublished data are available from a 1975 Air Force survey of 606 supervisors in industrial career fields (A.F. Management Improvement Group, unpublished, 1975). In response to the statement, "I think that women are just as capable as men in performing duties required in my career field, " 65% of the supervisors either agreed or strongly agreed. Similarly, when asked, "Compared to men, do women require more or less attention from their on-the-job supervisor in accomplishing upgrade training?", the majority of respondents (57.6%) said that women and men required an equal amount of attention. One-fourth of the supervisors thought that women required more attention and 16% thought that men required more attention. Finally, in response to the question, "Compared to men, to what degree are women motivated to reach the required standards of job performance?" 47% of the supervisors replied, "the same as men," while 21% thought women less motivated to perform than men and 32% thought they were more motivated to perform than men.

Martin (1972) compared the managerial performance of men and women working in one of the few administrative areas that is sufficiently "integrated" to permit a large enough population for making comparison, the area of professional buyers for retail stores. The sample consisted of 127 buyers, 60 of whom were male and 77 female. The following areas of managerial competence were examined: self-confidence in judging new trends, faith in their buying decisions, pursuit of new resources, performance in obtaining product and service extras from resources, performance in new trend merchandise investment made, and leadership decisions. In none of these aspects were any sex differences found. Despite the female buyers' equivalent performance and competencies in these areas, they were paid substantially less than males -- even though the women as a group were more experienced. Finally, it was found that discretion in decision-making was more often granted to male buyers than female buyers.

Despite the paucity of information on how men and women compare in terms of actual, on-the-job performance, there is abundant information from experimental research to suggest that people tend to devalue the performance of women. That is, the same task performance tends to be rated more highly when it is ascribed to a man than when it is ascribed to a woman (see Quinn, p. 183). Since these data reflect attitudes and stereotypes, they will be dealt with in a separate section.

Leadership Ability and Behaviors

The literature on leadership ability and behavior among males and females consists primarily of studies conducted in artificial settings, particularly experiments conducted at graduate schools of business administration. The laboratory research is fairly consistent in finding marked sex differences in leadership behaviors. In field research, however, the results are quite different. In situations in which leaders and their subordinates are in a long-term, ongoing relationship there is little evidence to suggest differences in the behaviors, ability, or level of subordinate satisfaction of male and female leaders.

In artificial research situations it has been found that females are less inclined than males to accept the role of leader in mixed-sex work teams, even when their personality is high on dominance and assertiveness (Megargee, 1969). Webber (1976) studied the behavior of 62 four-person student groups. In each group there were either three females and one male or three males and one female. Few women reported themselves as task leaders, but they were considerably more likely to do so in those groups where the women outnumbered the males. The males in the minority position tended to exaggerate their own contributions to the task while downplaying those of the women. In a study of simulated problem-solving, Maier (1970) found that female undergraduates were significantly less likely than males to display assertiveness in having their decisions accepted if the decision was completely deduced from the problem situation. However, the young women were slightly more persistent than the young men when the decision was partially supplied by the experimenter. In other words, the females tended to exhibit

less confidence than males in their decision-making abilities. In another laboratory-type study, Bartol (1974) analyzed the effect of the sex composition of student work groups on member satisfaction. The results were not clear-cut but, on the whole, suggested few major differences in member satisfaction with males and female leaders.

The Bartol study is one of the few pieces on non-field research in which marked sex differences failed to emerge. The results of this investigation may reflect the fact that the task on which students were engaged was on-going over an 8-week period, making possible more realistic and meaningful appraisals than are typical in a laboratory experiment. In the few field studies investigating leadership behaviors, differences between males and females have consistently failed to emerge. Day and Stodgill (1972) collected data from 256 civilian employees of the Air Force Logistics Command concerning their description and appraisal of 37 male and 36 female supervisors occupying comparable positions. The majority of supervisors were described by four subordinates. On the average, the female and male supervisors were described as exhibiting similar patterns of leadership behavior. The men and women leaders were perceived to be virtually identical on the following subscales on the Leader Behavior Description Questionnaire: Representation, Demand Reconciliation, Tolerance of Uncertainty, Persuasiveness, Structure, Tolerance of Freedom, Role Retention, Predictive Accuracy, Integration of Group and Influence with Superiors. Additionally, the male and female supervisors were rated quite similarly on a nine-point scale whose poles were poor leader/outstanding leader (male mean = 6.81, female mean = 6.53). The only two scales on which the two sexes differed by 1 point or more were Consideration and Production Emphasis, both of which were higher for the female supervisors. The data from this study also revealed that whereas time in a G.S. level was related to leadership behavior among males, the same was not true for females. Males who spent the most time in a grade were rated by their subordinates as low in Reconciliation of Conflicting Demands, Accuracy of Prediction, Influence with Superiors, and Effectiveness. Among the females, length of time in grade was virtually unrelated to their pattern of leadership behaviors.

In another field study, Osborn and Vicars (1976) collected data bearing on two broad questions: "Do male and female leaders display different leadership behaviors?" and "Do units headed by females differ from those headed by males in terms of employee satisfaction? The information was gathered from employees of two mental-health organizations. Leader behavior was measured by two scales of the Leader Behavior Description Questionnaire, the same instrument used by Day and Stodgill in the previously described study. Job satisfaction was measured by the Job Descriptive Index which yields 5 scale scores. A multiple regression analysis revealed that, with regard to both the "consideration" and "initiating structure" dimensions of leadership behavior, leader sex did not contribute any significant unique variance when age, education and experience were controlled. Similarly, no significant sex differences were found when the various aspects of subordinate satisfaction were used as the dependent variables.

In conclusion, the available evidence suggests that in real-life, ongoing situations, the differences between male and female supervisors and managers with regard to leadership behavior and satisfaction of subordinates are small. The sex differences which emerge regularly in artificial, short-term settings probably result from the subjects' reliance upon sex-role stereotypes which extensive interpersonal interaction perhaps helps to alleviate.

In summary, the literature on job-related sex differences provides rather meager support for the stereotypes of women workers as unmotivated employees with especially poor records in terms of turnover, absenteeism and job commitment. There does appear to be some evidence that job-related characteristics such as those reviewed are related to income and occupational level. Since women have tended to be overrepresented in low-paying, low level jobs, most sex differences disappear when income and status are controlled. On the basis of the existing data, one might predict that as occupational sex segregation and discrimination diminish, so will other sex differences in the work place.

ATTITUDES TOWARD WOMEN IN WORK SITUATIONS

People's actions and behavior are affected by their own attitudes as well as by the attitudes of others towards them. In considering how to effect changes in occupational sex segregation and discriminatory personnel policies, the issue of attitudes toward women and sex-roles therefore becomes a salient topic for investigation. Commentators have repeatedly pointed out that the success of affirmative action programs is directly related to the attitudes of those who implement and are affected by the programs, although evidence in support of this view is primarily anecdotal. In this section, the results of direct surveys and indirect experimental studies which relate to attitudes toward women in work roles will be explored.

Direct Studies of Attitude

The volume of literature on attitudes toward women and appropriate sex-role behavior is quite large and is continually increasing. This research activity parallels society's effort to deal with and understand the changing status of women. A review of the entire literature in this area would be lengthy as well as irrelevant to the focus of this project. The review will therefore be devoted to those studies concerning the working roles of women, with particular emphasis on the views of managers, workers, and military personnel.

One of the earliest surveys of the men's attitudes toward women in managerial roles was conducted by the Harvard Business Review soon after Title VII of the Civil Rights Act went into effect (Bowman, Worthy & Greyser, 1965). A sample of nearly 2,000 subscribers to the Harvard Business Review responded to the mailed questionnaire. The majority of respondents (61% of the males and 47% of the females) believed that the business community would never wholly accept women managers, no matter what laws might be passed. A majority (56%) similarly agreed that women have fewer management opportunities than men. The respondents' perceptions of opportunities for women managers in different fields were also explored. Women were judged to have either "very little" or virtually no" opportunity by over 70% of the respondents in the following types of industries: manufacturing of industrial goods; construction, mining and oil; defense or space industry; and transportation. The only field in which a majority of respondents judged equal opportunity to be possible was in retail trade.

With regard to more explicit attitudes, the survey revealed that 41% of males and 7% of females were either mildly or strongly unfavorable to the idea of women in management. At the same time, 34% of the males and 82% of the females were either strongly or mildly in favor of women managers. Despite the apparent reserve of the male respondents in accepting the general notion of women managers, their attitude toward more specific dimensions of women in managerial roles was considerably more positive. For instance, a full 82% of the responding businessmen agreed that women can and do make unique and valuable contributions to

management. The proposition that a woman must be exceptional and overqualified in order to succeed in management was endorsed by 90% of the male and 88% of the female respondents. Interestingly, the data revealed that acceptance of women managers increased with the age of the managers. Furthermore, those who reported having a personal experience with women managers were more likely to be favorable to women in management than their colleagues without such experience. This finding once again suggests that on-going relationships with women in nontraditional roles may be effective in reducing the impact of negative stereotypes.

When asked about possible explanations for the persistence of negative attitudes toward women managers, the answer most frequently agreed to by respondents of both sexes was that competition for management jobs was keen. Still, a majority of those surveyed agreed that another factor was the deeply ingrained prejudice against women working outside the home in our culture.

In another section of the Harvard Business Review Survey, respondents were asked to give their opinions about leader-subordinate relationships. When presented with the statement "men feel comfortable working for women," only 9% of the males and 15% of the females agreed. However, in response to the more personal question, "I would feel comfortable working for a woman," 27% of the men and 75% of the women expressed agreement.

In a more recent but limited survey, Bass, Krusell and Alexander (1971) questioned 174 males employed full-time in business or industry concerning their attitudes toward women and work. As a group, the men had slightly negative attitudes toward women in supervisory roles. The majority of respondents agreed with such statements as, "Women in supervisory roles have difficulty in dealing with males in subordinate positions" and "I would be most uncomfortable having to take orders at work from a woman." The respondents also tended to express unfavorable attitudes towards the dependability of women workers, with a small majority expressing the view that absenteeism, tenure, and overall responsibility were lower among women than men. However, the survey participants were more favorable in the responses to questions dealing with women's capabilities, emotionality, and career orientation. Contrary to the finding reported in the Bowman et al. (1965) study, age was not found to be related to the respondents' attitudes. Another discrepant result was the tendency of respondents who had more direct experience with women in subordinate roles to have more negative attitudes than those with no direct interaction. This finding can perhaps be explained by considering research on contact between minority and dominant groups, in which it has been found that prejudice between the groups declines only when interaction occurs on an equal basis.

Empirical information concerning attitudes toward women in non-traditional blue-collar jobs is extremely scarce in the social scientific and managerial literature. In the previously discussed Meyer & Lee study (1976) of public utility companies, 44% of the nontraditional blue-collar women said that their male coworkers showed fairly strong or very strong resentment toward them. An additional 41% said

that the men had showed initial resentment but that it had dissipated. Only 16% of the women felt that their male coworkers definitely accepted their entry into an "all-male" field. In the same study, some information was also collected from a small sample of male coworkers. Thirty percent of the men interviewed expressed a negative attitude toward having female working associates, while 35% had mixed feelings. In comparison, none of the men who worked with women in nontraditional white-collar jobs had an unfavorable opinion about their female coworkers. Furthermore, when asked how other male peers felt about having a woman working with them, 45% of the blue-collar men attributed negative feelings to their colleagues (16% for white-collar) and 35% said their colleagues had mixed feelings (30% for white-collar men). It would therefore appear that the women's perceptions of their peer's hostility or resentment were fairly accurate.

The previously mentioned unpublished Air Force Management Improvement Group survey collected some data in 1975 which are related to the issue of attitudes toward women in nontraditional fields. A sample of 838 male coworkers was asked various questions about their perceptions of women working in industrial career fields. When asked if women encounter any negative attitudes on the job because of their sex, 11% of the sample said they encountered a great many and 43% said they encountered some, while the remainder reported either no or few negative attitudes. In response to another question, 55% of the respondents believed that some men on the base would consider women equal working partners, while a minority said that no man would do so (6.8%) or that all men would do so (4.5%). Twenty percent of the sample felt that most or all men would consider women inferior, 62.4% thought that some men would make this judgement, but 16.4% said that no man on his base would think of women as inferior. Despite the fact that a majority of these respondents thought that women in industrial Air Force careers experienced some negative attitudes, many (53.7%) felt that women received better on-the-job treatment than men and that their work was judged more leniently than men's work (40.5%). There did not appear to be a question which shed light upon the manner in which the perceived negative attitudes toward women was manifested.

In the same Air Force survey, a sample of 606 supervisors was also questioned. In response to a question of their perceptions of the treatment of women by male coworkers, opinion was rather evenly divided. About a third of the sample (35%) thought that males treated females as less capable, while another third (34%) thought that males gave females preferential treatment. The remaining 30% believed that women were treated as equals by their male coworkers. Among those respondents who had supervised women, a sizeable percentage (47.9%) felt that men are easier to supervise, while about a third (31%) said there was no difference in supervising men and women. A majority of the supervisors (59.9%) reported that they had no preference as to whether they supervised men or women. Overall, then the supervisors seemed to express moderately positive attitudes toward the women in industrial career fields. It might be pointed out, parenthetically,

that the women themselves agreed with these perceptions. A large percentage of women surveyed for the same study (N = 561) agreed that their immediate supervisors accepted them very well when they first started the job (67.4%) as well as at the time of the survey (81.3%). More than three-fourths of the women felt that their supervisors gave about the same recognition to men and women for a job well done. These women also thought, for the most part, that their fellow workers were usually friendly (86.1%), cooperative (61.3%), and accepting of them (81.1%). Only about 10 percent of the women felt their coworkers were usually hostile to them, while the majority (70.4%) said their coworkers were seldom or never hostile. At the same time, a large number of women (52.2%) agreed that they had experienced negative attitudes because of their sex. As in the case of the male questionnaires, there is little information in the survey relating to what form the perceived negative attitudes took, but in light of responses to other questions, they were presumably rather subtle effects.

More formal attitudinal surveys have been conducted in various branches of the military. These studies have been concerned with general attitudes toward women in the military rather than focusing on women in specific work roles. In the Army, for example, an extensive research program, encompassing four broad research areas, has been developed to "investigate sociocultural, physical, and psychological factors in the selection, classification, assignment, and training of female personnel to insure their effective utilization in the U.S. Army" (ARI memorandum, 1977). A major concern of such programs has been to study the attitudes of military personnel toward the expansion of women's roles so that difficulties may be anticipated and solutions proposed. The kind of question being asked by such research endeavors is: "Are soldiers likely to be so resistant to changes of this sort that the implementation of these changes will be made difficult?" (Savell & Collins, 1975).

Research conducted by investigators from the Army Research Institute for the Behavioral and Social Sciences has provided some interesting results. In one part of the study questionnaire, respondents (a sample of 721 male and female officers and enlistees from four Army installations) were asked to rate 24 job titles in terms of their judged appropriateness for women. Only one job (rifle-carrying infantry foot soldier) was judged by the majority of respondents to be inappropriate for women. Women respondents, especially women officers, were more likely than men to judge distinctly military occupations, such as bomb disposal specialists, as appropriate for a woman (Savell, et al., 1975). Despite this difference, many combat-oriented jobs were perceived to be appropriate by a majority of both men and women. A report by Segal, Kinzer, and Woelfel (1975) has pointed out that civilians appear to be more opposed to the assignment of women to combat duties than are Army personnel, based upon surveys in both sectors.

The 1974 Army survey of 721 soldiers also included a question designed to determine the "traditional" and "contemporary" orientation of respondents based on their endorsement of one of two alternative

statements. Subjects were also asked to indicate their perceptions of how other individuals or groups (the majority of men in the Army, the majority of women in the Army, their best friend of the opposite sex, and their best friend of the same sex, their mother and their father) would respond. The majority of both women and men, when indicating their own attitude, agreed with the statement that, "Relationships between men and women are ideally equal and husbands and wives would share domestic, child rearing and financial responsibilities." Women respondents were much more likely to agree with this statement than men, however. Both sexes considered themselves to be more contemporary in their views toward sex roles than was their best friend of the same sex. This finding suggests the possibility that it may be perceived to be socially unacceptable to admit to traditional views and that corresponding changes in attitudes may result over time (Savell and Collins, 1975).

Overall, there have emerged some notable consistencies among the various studies concerning the attitudes of military personnel toward women and sex-roles. First, as might be expected, women themselves have more favorable views toward the expansion of women's roles (Coye, Denby, Hooper, & Mullen, 1973; Fuller, 1973; Savel, et al., 1975; Savell & Collin , 1975; Woelfel, Savell, Collins & Bentler, 1976). Secondly, officers have been found to be more contemporary in their sex-role attitudes than enlisted personnel (Fuller, 1973; Savell, et al., 1975; Woelfel, et al., 1976). By and large, the results have suggested that men in the services are not adamantly opposed to the expansion of women's roles.

In summary, the evidence from direct studies of attitudes, in which men are asked directly how they feel about women in various work roles, tends to indicate that few men are hostile toward women, but that many are unfavorable toward having women in nontraditional work areas. However, many men also view the expansion of women's work roles favorably. In short, there appear to be both differences of opinion and ambivalence about women in the world of work.

Indirect Studies of Attitudes

A considerable amount of information concerning attitudes toward women and sex-role stereotyping can be gleaned from the many experimental studies of performance evaluation. One of the earliest pieces of research in which the devaluation of women's work was highlighted was the study by Goldberg (1968). College women were asked to read articles on linguistics, law, art history, dietetics, education and city planning and to evaluate them. When the articles were attributed to male authors they were rated more highly than when the same articles were attributed to female authors. Similarly, Pheterson, Kiesler and Goldberg (1971) found that when college women were asked to judge paintings, those described as having been painted by a man were judged to be more technically competent than those by a woman.

These two early studies have been followed by numerous work-related and performance-related investigations which have provided evidence of

prejudicial attitudes towards women's task performance and accomplishments. Spence and Helmreich (1972) found that, when presented with a female stimulus person playing as either competent or incompetent and feminine or masculine in her interests, college students as a group rated the masculine-competent role most highly in terms of likability, sincerity, adjustment and intelligence. However, the data also revealed that males with traditional attitudes, unlike other subjects, preferred the incompetent feminine stimulus person to the competent feminine one.

Shaw (1972) used 132 college recruiters to evaluate fictitious job applicants, whose descriptions were altered as to their gender. Sex had a differential effect on the recruiters' ratings, depending upon whether an applicant was seeking a management trainee or engineering position. Those applying for a management traineeship were rated substantially better if they were described as males than if they were described as females, even though all descriptions presented applicants having the same credentials. Engineering applicants, on the other hand, were rated slightly more favorably when they were described as being women. Nevertheless, for both types of jobs the recruiters were more likely to recommend hiring the male than the female applicants.

Another study also found that sex stereotypes detrimentally affect women in the selection of job applicants. Cecil, Paul and Olins (1972) asked students enrolled in a management course to identify the attributes which they felt an interviewer would consider important in evaluating "Mary Thomas" or "Joe Stephens" for a nonspecified white-collar job. Distinctly different attributes were emphasized depending on whether the fictitious person was male or female. For males, such descriptors as "persuasive individual," "is aggressive," and "exceptional motivation" were judged to be important, while for females, "pleasant voice," "excellent clerical skills," and "immaculate in dress and person" were the attributes stressed.

Two studies by Schein (1973, 1975) similarly suggest that women are stereotyped as possessing few if any attributes useful to leadership roles. Samples of both male (in the 1973 study) and female middle managers (1975 study) agreed that successful middle managers possess characteristics, attitudes and temperaments more commonly ascribed to men in general than to women in general.

Several researchers have found evidence that an individual's level of competency interacts with differential performance evaluation. In one study (Piacente et al., 1974), a sample of college students was asked to rate the performance of males and females acting either competently or incompetently. Competent stimulus persons were judged equally favorably regardless of sex. Incompetent females, however, were judged less positively than a male acting in a similar manner. Moreover, incompetent females were perceived as more feminine than competent females. Conflicting results have, however, been reported by Deaux and Taynor (1973), who found that highly competent males were rated more positively than highly competent females, while males of low competency were rated lower than similar females. This discrepancy is perhaps attributable to differences in the dependent measures used.

In the Deaux and Taynor study, the subjects were asked to rate the stimulus person in terms of intelligence and competency. The ratings perhaps reflected the subjects' approval and rewarding of behavior congruent with stereotypical sex-role behavior. That is, the male's performance was devalued, relative to the female's performance, when it reflected incompetence. The Piacente et al. study used ratings of a broad number of bipolar personality attributes, such as strong/weak, impulsive/deliberate, and positive/negative. In the incompetent condition, females were perceived as more excitable, weaker and softer than males. These adjectives less specifically relate to performance evaluation than to a personal evaluation, and it is perhaps due to this fact that the conflicting results emerged.

Taynor and Deaux (1973) explored the relationship between performance evaluations and sex-typing of tasks. Subjects in this study were asked to read a description of a male or female performing well on either a "masculine" or feminine" task. The woman who performed well in the masculine task was evaluated more highly in deservingness of reward and effort than was the equally performing man. The man was not over-evaluated in similar fashion on the feminine task. It should be pointed out that neither task was work-related.

Hagen and Kahn (1975) also studied reactions to competency in women in an experiment in which subjects interacted with others of the same or opposite sex in situations of cooperation, competition or observation. The results revealed that male subjects liked competent women only when they observed their performance rather than when they interacted with them directly. Subjects of both sexes were more likely to exclude a competent woman from their group than to exclude a competent man, and to include an incompetent woman than an imcompetent man. This study suggests that some of the discrepancies in findings from other studies could reflect differences in the perceived relationship between subjects and the stimulus person being evaluated.

Several investigators have explored the influence of sex-role stereotypes and attitudes towards women on evaluations of supervisory behavior (Rosen & Jerdee, 1973; Bartol & Butterfield, 1976), evaluation of applicants for jobs (Rosen & Jerdee, 1974a, 1974b). and performance ratings of work (Bigoness, 1976; Cline, Holmes & Werner, 1977; and Hamner, Kim, Baird & Bigoness, 1974). With regard to evaluations of leadership or supervisory behavior, Rosen and Jerdee (1973) found that a sample of both undergraduate students and bank supervisors rated a reward style of supervision (controlling subordinates by reward dispensed) as more appropriate for male supervisors, while a friendly-dependent style (asking subordinates in a friendly way to help supervisors through improved performance) was viewed as most effective when used by supervisors of either sex with subordinates of the opposite sex. The researchers concluded that sex-role stereotypes do influence ratings of male versus female supervisors. The Bartol and Butterfield (1976) study lend further support that the sex of a manager affects how different managerial styles are evaluated. Female leaders received more favorable ratings than male managers in response to a vignette which depicted the supervisor as showing great consideration for subordinates. Male leaders, on the other hand, were rated more positively than females on a vignette depicting the manager with

strong organizational and planning skills. It thus appears that, even when men and women assume the same role, they are expected to exhibit different kinds of behaviors in order to be considered effective.

Rosen and Jerdee explored, in two separate laboratory investigations, the effects of an applicant's sex on personnel decisions. In the first (1974a), undergraduate business students rated candidates for managerial positions. Male applicants were accepted more frequently than equally qualified females. The subjects also evaluated male applicants more favorably on general suitability, potential for long service, and potential for fitting well into the organization. In their second study (1974b), Rosen and Jerdee used an in-basket exercise with a sample of male bank supervisors to assess various types of sex discrimination. The results confirmed the investigator's hypothesis that the supervisors would tend to discriminate against women in personnel decisions involving promotion, development and supervision. On the other hand, discrimination against male employees was manifested in personnel decisions concerning conflicts with family role responsibilities.

Finally, three other studies add to the conclusion that sex-role stereotyping affects performance evaluations in a complex fashion. Cline, Holmes and Werner (1977) used a heterogeneous sample of students and residents of a small town or large city to evaluate sketches or quotations attributed to either men or women. The results indicated that males devalued the production of females, while females also devalued the production of males. This interaction effect was found only on the intellectual productions (the quotations). Both the studies by Hamner et al. (1974) and Bigoness (1976) examined the effect of ratee sex and race on ratee performance. In the first study, it was found that sex stereotypes did influence performance ratings of a sample of college undergraduates on a simulated work-sampling task even when objective measures were defined. Female ratees were rated higher than males, particularly for high-performing ratees. Similar findings were reported in the Bigoness (1976) study.

Although the results of the above studies are not always consistent, it would appear that, in laboratory-type situations at least, women and their performance tend to be undervalued relative to comparable efforts ascribed to men. In some studies, it seems that women may be particularly "punished" by poor ratings when they engage in activities which are not considered "feminine." These studies have important implications with respect to supervisory ratings of women in skilled industrial fields. It is indeed unfortunate that more data from field studies regarding supervisory attitudes, measured indirectly, are not available.

MANAGEMENT POLICIES AFFECTING WOMEN EMPLOYEES

Until recently, little attention was paid to the formal and informal policies of corporations with regard to their female employees. At the formal level, there were probably few explicit policies aimed at women, except those dealing with maternity and hours of work (in compliance with state laws which regulated women's work schedules). A network of informal policies, however, generally affected decisions on recruitment, hiring, salary, and promotion. These policies consciously or unconsciously excluded women from jobs which were considered "male," and which were associated with higher pay and responsibility.

The recent legislation prohibiting employment discrimination on the basis of sex has made it necessary for most American corporations to reconsider and alter their policies affecting women. In particular, Revised Order No. 4 requires Federal contractors to take affirmative action in setting goals and timetables for the employment of women in job categories in which they have been underutilized. An affirmative action program includes a set of specific, result-oriented policies and procedures to which the contractor is committed to apply every "good faith effort." The order emphasizes that procedures without efforts to make them effective are meaningless.

The literature on affirmative action programs and corporate policies affecting women is voluminous. The vast majority of this literature deals with tips and "how-to" information for companies implementing such programs (for example, Berwitz, 1975; Grauir, 1976; Higgins, 1975; Hilaael, 1976; Hollander, 1975; Newgarden, 1976; Slevin, 1971). Information on what companies are actually doing is extremely rare. As Slevin (1971) points out, "Most firms are in the early phases of attacking the problem of full utilization of women and are reluctant to expose their current programs to much publicity (p.8)." Evidence concerning the effectiveness of different policies and procedures is essentially nonexistent. In this section, then, our main focus will of necessity be on strategies for the utilization of women which have been recommended in commentaries rather than research reports. Whenever data bearing on an issue have been collected, they are included in the discussion.

Top Management Support

Numerous writers have stressed that an essential component of corporate policies designed to enhance the utilization of women is the visible support of top-level management. Evans (1975) points out that without such support, people "down the line" will not accept non-traditional employment for women as a serious company objective. According to Slevin (1971), top-management commitment should be embodied in a clear policy statement issued by the chief executive officer and communicated throughout the company. The only non-anecdotal evidence that top management support is indeed an important factor in the success of affirmative action programs comes from the study of Meyer and Lee (1976). Although their sample of companies was too small

(N=10) to warrant generalizations, they made the following observation:

> The degree to which managers at all levels seemed to take the Equal Employment Opportunity program seriously--that is, to make concerted efforts to move women into traditionally male jobs-- appeared to be directly related to the extent to which the program was promoted and monitored at corporate staff level....Moreover, as might be expected, strong endorsement of the program by top officers in a company helped the staff person to achieve respectable EEO goals (p. 31).

Visibilities of the Policies

Related to the previous issue is the visibility of the policies and related programs themselves. In order for the policies to achieve success in meeting goals and deadlines, they must obviously be communicated throughout all levels of the company. Revised Order No. 4 stipulates that corporate policies relating to Equal Employment Opportunity must be disseminated both internally and externally. Evans (1975) has advocated that communications should start at the top:

> The word should go from the highest echelons to middle management, perhaps through a series of preliminary meetings. The objective: to impress upon middle-level executives the seriousness of the problem, the value of the plan, the importance of their role and their inputs and, most crucial, their responsibility for seeing the program through... On the heels of these preliminary discussions should go a series of communications (through the company paper, direct mail, and other means) from top management to the workforce, making clear the company's legal obligation and asking the cooperation of employees (p.33-4).

Lyle (1971) did case studies of 10 companies in the field of trade, manufacturing and finance. In each of these firms at least 20 employees in both managerial and non-managerial jobs were interviewed. A major finding of this investigation was that line managers, whether they were male or female, had a "shockingly low level of information about the employment policies of their company" (p. 60). For example, about 18% of the 80 line managers interviewed did not know if their firm had an affirmative action program for women, and 35 percent had no knowledge of goals and timetables for female employment to which their company was committed. It was also found that in seven of the 10 companies studied, the posting of a sign in the Personnel Office advising that the company was an Equal Opportunity Employer was the only type of information dissemination device. Lyle concluded that the development of communication mechanisms is a critical factor in contract compliance.

Bulwik and Elicks (1972) conducted a survey of 27 major corporations

in the San Francisco Bay area concerning company policies/practices relevant to the employment of women. A section of the survey dealt specifically with methods of disseminating information about equal employment policies. Six of the 27 firms had established special awareness and education programs for management. In the majority of firms, however, managers depended on their superior to discuss the firm's policy and its ramifications. The firms which had management awareness programs found them very worthwhile and helpful, but most respondents felt that awareness programs would be more useful at the first-line supervisory level than for top management.

There has unfortunately been no investigation of the effects of various communications strategies in terms of ease of recruitment, worker attitudes, managerial attitudes, company morale, and so on. On the basis of the limited information presented here, it would appear that thorough and sensitively handled dissemination procedures could play a role in the success of affirmative action programs, but further data on this point are clearly needed.

Organizational Audit

Several commentators have argued that any serious effort to implement equal opportunity programs for women should be accompanied by an organizational audit to determine where the company stands before identifying needed programs and procedures and developing an action plan. Slevin (1971) designed a checklist of questions to be dealt with in such an audit. The areas covered by the scheme included the following: top-management commitment audit, program administration audit, recruitment audit, selection audit, promotion policies audit, attitude audit, and periodic program review. Similar suggestions were made by Hilaael (1976), who added to Slevin's list the following surveys and reviews: a survey of affected class personnel in various job categories throughout the organization, review of benefit plans, and a review of testing and placement procedures. The point emphasized by both commentators is that a firm data base enables organizations to establish more effective goals and to determine the number of staff, support facilities and resources required for the affirmative action program. It would appear that there are no available data concerning the extent to which companies implement these recommended audit procedures, nor concerning how effective they have been found to be.

Supervisory/Managerial Evaluations

A strategy which has been recommended repeatedly in the literature on affirmative action is the evaluation of supervisory or managerial personnel on the basis of their success in meeting equal employment opportunity goals. Evans (1975) has mentioned the linkage of EEO objectives to promotion and termination. Purcell (1974) described the implementation of such a strategy at one industrial firm. Here, sanctions (both rewards and penalties) are used for achievement of

EEO goals, for each foreman, supervisor or manager who had the responsibility of hiring or terminating employees. Purcell recognized that this system is relatively rare, but made the following observation:

> If top management talks EEO and means it (an essential condition), then top management must ask: Do the performance rating yardsticks of our EEO measurement system affect our managers' compensation and status? .....Performance in EEO must be a realistic criterion in reviewing a manager's pay and promotion opportunities, or else his behavior will not change much. A manager will act significantly only when he sees his company putting its money where its mouth is (p.103-104).

On the basis of available data, it would appear that very few companies motivate their personnel to actively pursue EEO goals with rewards or penalties. In the survey of 26 Bay area firms by Bulwik and Elicks (1972), none of the companies used managerial performance in hiring or promoting women as an evaluation criterion, and the same was true in Lyle's (1972) case study of 10 firms. Information on the effectiveness of this approach would be very desirable.

Recruitment Policies

A variety of recruitment strategies have been advocated and used to attract women to nontraditional careers. Some of these approaches emphasize external recruitment, but many companies are dependent primarily on internal recruitment. Bulwik and Elicks (1972) found that 86 percent of the firms in their survey were relying almost exclusively on in-house recruitment. The Meyer and Lee (1976) report suggests that internal advertisement and selection for nontraditional jobs might be even more prevalent in blue-collar fields than for white-collar positions.

In terms of specific techniques for internal recruitment of women, the approaches which have been described in the literature vary considerably along an active-passive dimension. Publications and job opportunity postings are perhaps the least aggressive procedures for recruiting women into nontraditional careers. Evans (1975) strongly urged a more active approach. He has argued that in order to successfully reach the worker:

> A key task is to convey information about the jobs: What is involved, work patterns and environment, training opportunities and other pertinent details. There is no way to effectively do this through printed media alone. Potential job "changees" should be exposed to the prospective work environment through tours, or, if that is not possible, through audio-visual presentations (p.35).

Ells (1973) has described such a program implemented at one corporation. In order to heighten women employee's awareness of jobs in the skilled trades fields, a "traveling road show" was created, aimed primarily at women in lower-paying hand-assembly jobs. The show consists of slides depicting women on the job in such occupations as mechanics, machine operators, drafters, and security guards, accompanied by a tape in which the women describe the pros and cons of their jobs and give advice to others who might wish to join them.

Another strategy is to establish a program of career counseling for women employees. Bulwyk and Elicks (1972) found that about 50 percent of the firms in their survey did have some type of career counseling program, but a relatively small percentage had programs specifically geared to women. Those firms with special counseling for their female employees all described their objectives as helping women set goals, helping them develop ambition, helping women to seek and cope with responsibility, and encouraging them to make full use of their potential.

Although many companies depend heavily on internal recruitment for nontraditional jobs, various techniques for external recruitment have also been utilized or emphasized. Hollander (1975) pointed out several steps for the employer who is aggressively promoting EEO for women, among which are the following: recruitment sources (schools, agencies, etc.) should be asked to actively refer female applicants, women's organizations and community agencies and leaders should be notified of the EEO policy, women should be shown in photographs for consumer/employment advertisements and the annual report, and appropriate posters should be displayed at hiring locations. Slevin (1971), in his discussion of a "recruitment audit," suggested using some women recruiters, recruiting at women's schools, and sensitizing recruiters to EEO goals and policies.

In some fields in which qualified and interested women are difficult to find, more ambitious recruitment strategies have been implemented. For example, several chemical and engineering companies have demonstration programs for junior and senior high school women and minority students to interest them in careers in science and engineering. Others provide funds for special summer workshops, college scholarships, summer jobs, and so forth ("Employers step up programs," 1976).

In sum, diverse methods have been used to attract women to nontraditional jobs, but the efficacy of the methods appears not to have been evaluated.

Selection Procedures

A great deal has been written concerning the use of personnel tests and alternative selection procedures in the context of equal employment opportunity, but the focus of these writings has been on minority employment. However, some basic concepts and legal considerations apply to hiring and placing women employees as well.

The Federal government, in monitoring compliance with equal

employment opportunity legislation, has devoted considerable attention to the selection and placement criteria used by organizations, since these criteria represent a potential source of discrimination. The government does not maintain that equal hiring ratios of affected and nonaffected classes be maintained in order to satisfy the requirements for nondiscriminatory hiring. In other words, if a certain attribute (such as strength or spatial ability) is needed for the successful performance of a job, and certain groups have a higher level of that attribute than do other groups, then disproportionate numbers from these certain groups can be hired. The important point, however, is that the employer must be able to supply evidence that the attribute is job-related and differentially distributed. The landmark case on this issue made it clear that the use of standards which have not been validated against job success is unlawful (Byman & Spitzer, 1971). Furthermore, an employer cannot exclude a whole group of persons simply because the average level of an attribute is lower than that of another group. This issue has been raised in numerous court cases in relation to the exclusion of women (as a class) for jobs with certain weight-lifting requirements. In these cases, the rulings cited female weight-lifting requirements (often imposed by state protective laws) as violations of Title VII (Lyle, 1972). These decisions make it necessary for candidates for a job to be individually tested for weight-lifting ability.

The Equal Employment Opportunity Commission and Office of Federal Contract Compliance have maintained that, whenever technically feasible, only tests and other selection criteria which have been validated using procedures for criterion-related validity can be used. Affirmative action programs aside, it would appear that systematic test validation would be a sound and efficient business practice, particularly for large organizations. It has been estimated, however, that fewer than 5% of American companies have empirically validated their selection or promotion criteria (Byham & Spitzer, 1971). In the wake of recent court cases, these efforts may well be expanding. Dipboye et al. (1976), however, have suggested that some employers may be abandoning their formal testing programs because of court decisions and relying predominantly on interviewer assessments. The need for empirical validation of all types of selection criteria apparently has not been generally recognized and dealt with in American firms.

The selection of appropriate job performance criteria against which to validate the selection measures is often more problematic than the development or identifications of tests for selecting employees. Objective, easily quantifiable, reliable standards are clearly to be preferred. For example, measures of absenteeism or turnover are often used. However, such indexes may be only marginally important to the needs of the company, or less important than actual on-the-job productivity and work quality. Unfortunately, job performance in many cases is measured by supervisory ratings, and these ratings may of themselves be of questionable validity. The use of supervisory ratings as criteria

for validating selection standards may be particularly problematic for jobs which are nontraditional for women. The evidence cited in the section on indirect measures of men's attitudes toward women as shown in evaluations of their task performance suggests the possibility that such evaluations may be biased downward for female employees. This problem is one about which further research is needed.

Another important area of concern is the issue of differential validity. Different sets of behaviors and attributes can lead to similar job performance, and such differences may be group-related. For example, spatial ability may be an important predictor of job success in a particular occupation for men but not for women, whereas interest and attitude may be better discriminators among women than men. This suggests the advisability of performing separate validity studies for the two sexes, to determine if different cut-off scores on selection and classification criteria are warranted. Failure to perform separate validation studies may lead to test bias, which may be defined as systematic overprediction or underprediction of criterion measures (Einhorn & Bass, 1971). In the case of minority groups, research has demonstrated that test validity information obtained from the general population is not always appropriate for the disadvantaged (Byham & Spitzer, 1971). There is little available information concerning male-female differential validity, but presumably it will become increasingly necessary to explore this issue, particularly in cases of nontraditional jobs.

Training Programs

Job training is a fairly standard procedure in many American companies. In the context of affirmative action programs, however, training has taken on new dimensions. A number of firms and governmental agencies have developed special training classes designed to upgrade some of the basic skills of groups who might be at an employment disadvantage. One corporation, for example, initiated a program of lowered selection standards for minority applicants, coupled with intensive training to bring the employee up to standards. A similar strategy has been used by the Department of Defense in "Project 100,000," in which men who could not meet standard selection-test criteria were given compensatory training. According to government reports, the program has proved successful: men inducted through the special program have been found on the average to do as well in the armed services as regular inductees (Byham & Spitzer, 1971).

Specialized training programs for the disadvantaged are more predominant in certain industries than in others. In a survey of 250 major corporations, Cohn (1970) found that about 80% of the aerospace corporations and 100% of the motor vehicle companies did have special training programs for minority employees. Unfortunately no comparable data are available on special women's programs for blue-collar skills.

The recent study of women in public utility companies yielded some interesting information on this issue (Meyer & Lee, 1976).

It was reported to them by training directors in these companies that the regular training for craft jobs assumed that the trainees had basic familiarity with mechanical or electrical terminology, such as the names of tools. Since many women are unfamiliar with such terms as "open-end wrench" or "hex nut," they were often at a marked disadvantage in the regular training programs. According to this study, the provision of special training for women facilitated their integration into formerly all-male, blue-collar jobs:

> "Programs of this kind were found not only to reduce the failure rate of women significantly, but also to increase the likelihood that the women would be accepted by their working associates when they were put on the job. Women trained in this manner did not display the kind of ignorance that the men expected of them" (p.38).

In sum, specialized training programs for women entering non-traditional skilled jobs may often be desirable or needed in order to give the women the skills and self-confidence required to perform well. Additional data relating to the efficacy and success of the various training strategies would be quite valuable.

Employee Benefit Policies

The "fringe" benefits for American workers are an important component of their overall compensation. In the past two decades, employee benefits have risen more than twice as fast as wages and salaries. According to anti-sex-discrimination legislation, employee benefits should be equitable for both sexes. This requirement has been found to give rise to considerable controversy, however, particularly with regard to pregnancy/maternity policies.

The possibility for differential treatment of male and female employees emerges in several areas of employee benefits. Some of the areas of concern include the following: differential benefits for different categories of employees (such as clerical versus managerial), which results in de facto discrimination when jobs are sex segregated; the provision of health insurance coverage and death benefits to the spouses of male but not female employees; reduced retirement payments for women based on actuarial tables of longer life expectancy for women than men; and the provision of benefits to family members of employees but not the employees themselves. The guidelines issued in April, 1972 by the Equal Employment Opportunities Commission prohibits such forms of differential treatment. However, in most cases definitive court cases have not yet clarified some of the ambiguities and the legal status of the guidelines. Therefore, it is possible that companies will continue their past practices "until there is a court ruling on the subject" (Simmons, et al., 1975, p. 77).

The EEOC guidelines on maternity policies have stirred a great deal of controversy and court action. Historically, employers have had virtually a free hand in developing policies to deal with pregnancy and childbearing. These policies have varied widely from one company to the next, ranging from the firing of pregnant women to requiring a specified and often arbitrary leave of absence or else treating maternity leave as any other temporary disability.

Rigorously interpreted and enforced, the EEOC guidelines will require changes by most American corporations. According to Title VII, women employees must be granted childbearing leaves and must be permitted to return to their original job, or one similar, without loss of seniority. The 1972 guidelines (Title 29, Labor, Ch. XIV, Part 1604.10) further stipulate that childbirth and complications of pregnancy are, for employment purposes, temporary disabilities which should be subject to the same policies and benefits as any other temporary disabilities.

Kistler and McDonough (1975a) have observed that employer opposition to the guidelines has focused on three major arguments : (a) the costs of compliance would be prohibitively high, (b) maternity leave benefits would be abused, and (c) pregnancy is a voluntary condition. The cost factor is clearly the most critical of the three. A number of cost estimates have been developed, for particular firms as well as broader segments of industry. One major company projected that the cost for an 8-week paid maternity leave would have amounted to $19 million in 1971-72. On a unit basis, this would amount to $20 per employee, or $41 per female employee. A Federal Reserve Bank estimated that a 14 to 16 week leave at 70% of full pay would cost $40 to $50 annually for each female employee. That report concluded that the "introduction of paid maternity leave would have a negligible impact on overall unit labor costs" (Greenwald, 1973, p. 17). In one court case, actuarial testimony was introduced which estimated that a 13-week paid maternity leave would cost employers nationwide some $804 million annually (Kistler & McDonough, 1975b), but some estimates run as high as $1.6 billion ("A pregnancy ruling...," 1976). The evidence for these estimates, however, is problematic. In one of the most rigorous econometric analyses of the issue, using data from the state of Wisconsin, Gerner (1974) estimated that paid maternity costs would represent, in the aggregate, only .06% of wages and salaries. Clearly, paid maternity leave would cost employers some money, but the estimates on a per person basis suggest that the additional expense is less onerous than that which is implied by total dollar increases. Furthermore, analyses of costs have failed to consider potential savings which could result from reduced turnover and training needs if paid maternity leaves were available.

With regard to the question of what maternity-related policies are currently prevalent in American firms, the existing data are rather meager. In a 1971 survey of 219 companies, 79.5% of the firms reported that non-paid maternity leaves were granted, and 15.1% failed to grant any type of maternity leave. A question about disability pay was apparently not included, undoubtedly

reflecting the recentness of this controversial issue. A large number of respondent firms (31%) said that pregnant employees were required to leave their jobs before they reached their sixth month of pregnancy. Other responses ranged from a 3-month cut-off to no set time for women to leave ("Most firms limit work of expectant mothers," 1971).

In Lyle's (1972) case study of 10 firms, none of the companies provided disability benefits to pregnant women. Several of the firms had begun only recently to offer their female employees maternity benefits under the health insurance program, despite the fact that wives of male employees had had such coverage for years.

More recently, Kistler and McDonough (1975a) sent questionnaires to 74 large New England corporations concerning their maternity policies. Only 9 firms (12%) provided complete information, a fact which the investigators felt demonstrated the sensitive nature of the maternity leave question. Only three of the respondent firms offered disability programs for pregnant women. The maximum length of paid leave varied among these three companies from 6 weeks to 1 year. Each firm reported that total disability costs (including other disability benefits) ranged from 1% to 5% of gross annual payrolls.

Recent litigation and legislation are likely to have a dramatic impact on the issue of disability payments. The key court case is a class action suit of the International Union of Electrical Workers (IUEW) on behalf of 43 women production workers against their employer for violating Title VII in refusing to include disability due to pregnancy in its insurance program. The U.S. District Court for the Eastern District of Virginia ruled that the company's program did violate Title VII, and the U.S. Court of Appeals for the Fourth Circuit upheld the district court decision in June of 1975. The Supreme Court ruled more recently that employers need not compensate for maternity-related disabilities on the same basis as other temporary disabilities. However, this controversial issue is not settled. The U.S. Senate late in 1977 approved legislation protecting the rights of pregnant workers. The measure (S.995) would amend Title VII of the Civil Rights Act by specifically prohibiting discrimination on the basis of pregnancy or childbirth. The bill is pending in Congress.

In sum, the area of differential employee benefits for male and female employees is one marked by controversy and change. In any event, as in other areas reviewed, there is extensive discussion but very few facts about what policies and practices are successful in recruiting, training and retaining women in nontraditional jobs. However, it is evident that the issues raised in this section have been given considerable and serious thought by persons concerned with the utilization of women in nontraditional areas. Therefore, despite the paucity of data, the information gleaned in this literature review does provide a basis -- which is perhaps more fallible than desired -- for the development of recommendations to the Air Force.

III. FINDINGS FROM THE PILOT STUDY

As indicated in the previous chapter, there is a paucity of information regarding managerial strategies and policies for women in skilled blue-collar jobs. Therefore, new data were collected to supplement the literature review for the purpose of developing policy recommendations. The findings presented in this chapter represent the results of a pilot effort to learn about the utilization of women in skilled industrial fields in private industry.

METHODS

Instruments

Three questionnaires were developed as the means of collecting information on policies affecting skilled blue-collar women employed by civilian organizations. Decisions[4] regarding the content for the instruments were based on (a) issues raised in the literature; (b) perceived areas of concern to Air Force policy makers; and (c) consultations with knowledgeable individuals, such as Affirmative Action officials and the Project Officer.

The three questionnaires were designed for individuals within a corporation who were expected to have different perspectives on the issue of expanding women's opportunities in skilled industrial fields. First, there was an instrument for personnel administrators. This questionnaire consisted primarily of closed-ended questions aimed at learning about the firm's policies and practices with respect to women in nontraditional industrial careers. Additional questions dealt with perceptions of the firms' success in attracting and retaining women in such fields, and the characteristics of those women employees.

The second instrument was designed for individuals in management-level positions. The managers' questionnaire consisted of primarily closed-ended items which focused on the respondents' perceptions of barriers to the utilization of women in industrial career fields, the outcomes of existing policies, and policy implementation problems.

The final questionnaire was developed for front-line supervisory personnel employed in skilled production areas. Much of the supervisors questionnaire overlaps with that for the managers. The supervisors questions deal principally with the supervisors' perceptions of the outcomes of utilizing women in their specialty areas and barriers to such utilization.

The final version[5] of the three instruments is presented in Appendix C.

[4] As pointed out in the introduction, the original intent was to collect data from 25 corporations. Therefore, the instruments were designed to produce information bearing on the question of the effectiveness of various managerial policies. For example, it would have been possible to examine perceived differences in male/female job performance among companies who offered women special training opportunities. Since data were collected from only three companies, such analyses were not possible. Therefore, much of the questionnaire content is less relevant for developing recommendations than might otherwise have been the case.

[5] Since the pilot testing of the instrument was initiated primarily for improving the questionnaires, there were several versions to incorporate recommendations suggested by respondents. Consequently, for some items, analysis across all respondents will not be possible.

Sample

The three questionnaires were administered to individuals in three large New England firms which employ substantial numbers of women in skilled industrial jobs. These firms were:

1. A public utility supplying telephone services to the region. Throughout New England this company had over 40,000 employees, and in 1977 did $1,700,000,000 of business. It was considered an ideal site for questionnaire administration because of its leadership in promoting opportunities for women in nontraditional fields.

2. A Massachusetts-based manufacturing company which employs over 14,000 individuals in the manufacture of cameras, film, and polarizing filters and sunglass lenses. Sales for last year were $950,000,000. This company is also considered to be advanced in its programs and policies for women.

3. A manufacturing firm with headquarters in Massachusetts and with branches and representatives throughout the world. The corporation employs 35,000 persons in the manufacturing of digital computers and their components. Sales in 1977 amounted to $1,000,000,000.

Procedures

The individuals who completed the questionnaires were selected by the liaison person appointed by the firm, who in all cases was an individual from the personnel department. It was necessary to allow the firms the discretion to select participants so that work flow interruptions would be minimized. Random or systematic sampling was considered unfeasible, given the constraints of the work situation and the need to maintain the firm's active cooperation. The liaison person was aware of the selection criteria and, in most cases, made efforts to include the sample individuals with different backgrounds and experiences.

The questionnaires were self-administered to participants rather than presented orally in interview fashion. The public utility firm questionnaires were individually administered, while in the other two firms, the instruments were completed in group settings. An individual from the project team was always present during these administrations to answer questions and to discuss the questionnaire with the participants.

The data were collected during the summer of 1977.

RESULTS

Data were collected from 50 supervisors, 22 managers, and 3 personnel administrators in the three firms. All of the managers and 74% of the supervisors (N=37) were males. The two groups were, on the average, about the same age: 37.4 for the supervisors and 38.9 for the managers. All of the managers and 76% of the supervisors were married. Almost all of the managers had at least some college education and many had graduate degrees. A majority of supervisors also had at least some college education. Managers had been with their firms an average of 11.9 years with that organization.

A large majority of both groups believed that the number of women in skilled blue-collar fields in their companies was increasing, but more people characterized the increase as "slight" rather than "rapid." When asked what effects, if any, the increasing number of women had had on various aspects of the organization, both groups of respondents most often replied that it had either no effect or a beneficial effect, as shown in Table 3. For example, 68% of the supervisors and 94% of the managers felt that the increasing number of women had either a positive or no effect on male employees' morale. Eighty-nine percent of the supervisors and 96% of the managers perceived either a positive or no effect on productivity, and comparable results were obtained for questions concerning profits, turnover, and absenteeism. About half of the respondents (48% of the supervisors and 55% of the managers) felt that the increasing utilization of women in blue-collar jobs in their firms had positive effects on the attitudes of managers and supervisors toward women in nontraditional roles. These findings are important in view of the potential apprehension that the use of women in "men's jobs" could have a detrimental impact on efficiency, productivity, organizational climate and the like. The majority of supervisors (84%) and managers (86%) felt that there was an extensive or considerable amount of visable management support in their firm for hiring, training, and promoting women in skilled blue-collar fields.

The questions relating to the training of men and women for skilled blue-collar jobs elicited a wide range of opinions among both the supervisors and managers. The majority of supervisory (63%) and managerial (62%) respondents thought that the existing training programs in their firms were good for both men and women in providing the necessary skills and also in retaining employees throughout the training period. When asked how training affected the individual's self-confidence, a large percentage of supervisors (45%) and managers (52%) though that training was equally good for employees of both sexes. However, a sizeable number of supervisors (25%, compared with 10% of the managers) felt that their training programs were better at building men's self-confidence than that of women. Thus, it might be that the one area of training programs which needs special attention if there is an interest in integrating women into nontraditional fields, is the way the women perceive themselves and their skills after training is completed.

TABLE 3

Perceived Effects of the Increasing Utilization of Women on Organizational Outcomes

	Supervisors			Managers		
	Positive Effects	No Effects	Negative Effects	Positive Effects	No Effects	Negative Effects
a. Male employees' morale	21%	47%	32%	28%	67%	5%
b. Female employees' morale	67	33	-	83	17	-
c. Productivity	27	62	11	23	73	4
d. Efficiency	22	64	13	18	73	9
e. Profits	24	68	7	5	86	9
f. Organizational climate	32	39	29	48	43	9
g. Ease of recruitment	27	48	25	52	33	14
h. Turnover	10	68	22	15	80	5
i. Absenteeism and/or tardiness	19	66	15	5	86	9
j. Scheduling	12	67	21	5	90	5
k. Attitudes of supervisors/ managers toward women in traditional roles	48	28	24	55	23	22

The next section of the questionnaire dealt with the respondents' perceptions of obstacles which limit the participation of women in skilled blue-collar jobs in their firms. The results for the 13 obstacles listed are shown in Table 4, separately by group. Very often, the managers and supervisors had different views about these obstacles, but both groups agreed that the main difficulty was the unavailability of women with prerequisite skills and training. Both groups also felt that women's lack of interest in industrial fields was another major reason limiting their utilization. At the other extreme, neither group felt that physical plant limitations (such as the absence of women's rest rooms) posed a serious problem. The supervisors to a greater degree than the managers, perceived that women's physical limitations and their limitations in aptitudes relevant to skilled blue-collar jobs were important barriers to increased utilization. This difference may reflect the supervisor's greater on-the-job experience with women, but it may also reflect a higher degree of prejudice.

In another matrix-type question, respondents were asked their opinions about male-female differences on a number of job-related attributes. The results are shown in Table 5, separately for supervisory and managerial participants. For most of the listed attributes, the majority of both groups felt that male and female employees are about equal. More than 50% of the respondents perceive the sexes to be equal with respect to attendance, punctuality, ability to get along with coworkers, cooperativeness, attitude toward their work, productivity, accident rates, work quality, advancement potential, dependability and willingness to accept supervision. In some areas, male employees were perceived to be better than women employees by a substantial number of respondents, particularly the supervisors. More than a third of the supervisors felt men employees were superior to women employees in terms of willingness to work overtime, ability to get along with coworkers, productivity, advancement potential, and non-quit rates. Only with regard to overtime acceptance did more than a third of the managers perceive men to be better than women. In fact, more than a third of the managers felt that women surpassed men in their willingness to accept supervision. On the whole, then, supervisors appeared to be somewhat more skeptical of the job-related characteristics of women than did managers, but both groups exhibited a reasonably high degree of confidence that the sexes could perform equally in most areas.

The remaining areas covered on the questionnaire were different for the supervisors and managers. Supervisors were asked a number of questions concerning their own behaviors and perferences with male and female workers. Question 6 asked supervisors if they make allowances for a female that they would not make for a male under their supervision. The majority (52%) felt they made a few allowances. When asked about taking disciplinary action, most supervisors (84%) felt that they would be no more reluctant to take disciplinary action against a woman than a man, though 16 percent thought they would be somewhat more reluctant. Another question dealt with the supervisors' perceptions of men versus women with regard to their progress in terms of skills and abilities.

TABLE 4

Percentage of Respondents Perceiving an Obstacle to be Moderately or Extremely Important in Limiting Women's Participation in Skilled Blue-Collar Jobs

	Supervisors (N=50)	Managers (N=22)
a. Women's general lack of interest in industrial fields	67%	73%
b. Nonavailability of women with prerequisite skills and training	75	86
c. Difficulties with male workers accepting female coworkers	51	32
d. Lack of commitment of top-level management to the utilization of women	57	23
e. Lack of commitment of front-line supervisors to the utilization of women	56	55
f. Problems with the quality of work and productivity of female workers	40	38
g. Excessive absenteeism, turnover and/or tardiness of female workers	32	32
h. Physical limitations of women	44	33
i. Limitations of female applicants' aptitudes in such areas as mechanical reasoning, spatial visualization, and mathematical problem-solving	47	10

TABLE 4 (Continued)

Percentage of Respondents Perceiving an Obstacle to be Moderately or Extremely Important in Limiting Women's Participation in Skilled Blue-Collar Jobs

	Supervisors (N=50)	Managers (N=22)
j. Union-related difficulties	21%	15%
k. Declining economic conditions	28	23
l. Physical plant limitations (absence of women's rest rooms, etc.)	11	0
m. Difficulties arising from the need to transfer workers to other geographic areas	36	33

TABLE 5

Perceptions of Sex Differences on Job-Related Attributes

	Supervisors			Managers		
	Males Superior	Sexes Equal	Females Superior	Males Superior	Sexes Equal	Females Superior
a. Attendance record	17%[a]	54%	17%	27%	50%	9%
b. Punctuality	8	67	12	23	50	14
c. Willingness to work overtime	51	37	6	55	27	5
d. Ability to get along with co-workers	35	55	6	5	68	14
e. Cooperativeness	16	67	14	-	73	14
f. Attitude toward their work	17	73	8	9	68	14
g. Productivity	34	55	9	14	64	9
h. Accident or error rates	13	70	6	9	59	14
i. Quality of work performed	23	65	10	10	71	14

TABLE 5 (Continued)

Perceptions of Sex Differences on Job-Related Attributes

	Supervisors			Managers		
	Males Superior	Sexes Equal	Females Superior	Males Superior	Sexes Equal	Females Superior
j. Ability or skill potential for advancement	33	54	10	23	59	14
k. Non-quit rates (tenure)	36	36	9	29	38	14
l. Reliability dependability	17	72	6	9	73	9
m. Willingness to accept supervision	12	57	29	5	50	36
n. Non-dismissal rates	9	46	13	10	57	5

[a] Percentages may not add to 100% because of the "don't know" option.

The majority (61%) felt that women progress equally rapidly as men. While 28% felt that women progress more slowly than men, 11% felt that women progress more rapidly. A sizable number of supervisory respondents (34%) said they thought that men were easier to supervise than women but 40% said sex made no difference and another 18% found women easier to supervise. Most supervisors either had no preference about the sex of their workers (58%) or explicitly preferred a mixed group (30%). About a third of the supervisory sample (31.9%) felt that men are more effective than women as supervisors in their career field, but over 60% of the respondents perceived the sexes to be equally effective. Very few of the supervisors admitted having an unfavorable attitude toward the utilization of women in blue-collar jobs (8%). Most respondents said they were either favorable (78%) or neutral (14%). Finally, two questions on the supervisors' form asked about perceptions of men's and women's behavior vis-a-vis opposite sex co-workers. Many supervisors (30%) thought that men treated their female peers the way they would treat any other co-worker, and an even larger number (42%) thought their men were actively friendly and enjoyed mixed-sex groups. Only 20% perceived that men were unfriendly to female peers. The overwhelming majority (88%) found women to be friendly with the men with whom they worked. In sum, most supervisors appear to have had fairly positive experiences with female employees and to feel positively about the use of women in their fields.

Managers were asked a separate series of questions concerning the policies relating to the use of women in their firms. The results of the responses to question 10 on the managers questionnaire are shown in Table 6. It should be kept in mind that these figures are based on a very small number of cases (N=20 or 21, depending on the subquestion). However, one impression which emerges from the table is that there are very different perceptions of their firms' success in implementing the various policies. Only three firms are represented, yet widely divergent opinions were offered concerning information which is probably available in company records. This suggests a possible lack of familiarity with their company's affirmative action goals and the current status of those goals vis-a-vis successful implementation. Looking at the actual responses, it would appear that, according to the managers, very modest success has been achieved. Apparently, delays in the successful implementation of various policies, particularly with respect to recruitment of women for skilled blue-collar jobs, are common. In another policy-related question, managers were asked whether managers and supervisors in their firms were evaluated at all on the basis of their performance in meeting objectives for hiring/training women in industrial areas. A third of the sampled said "yes, routinely," while an additional 40% said "yes, in many cases."

Some information about actual policies in the three firms was obtained from the Personnel Administrator's questionnaire. Each firm had issued a policy statement affirming its commitment to the advancement and utilization of women. The companies used a multiplicity of means to communicate this policy to employees: all three firms posted notices,

TABLE 6

Managers' Perceptions of Their Firms' Success
With Specific Policies Relevant to Women

	ON SCHEDULE	SOME DELAY	SIGNIF DELAY	NOT YET IMPLEMENTED	NO SUCH POLICY
a. Recruiting women applicants for skilled industrial jobs	5%	50%	35%	--	10%
b. Modifying/updating selection procedures	10%	42%	10%	16%	21%
c. Modifying/updating procedures for validating selection criteria	10%	37%	5%	16%	32%
d. Modifying/updating job descriptions	20%	50%	5%	--	25%
e. Training women for skilled industrial jobs	10%	47%	31%	5%	5%
f. Preparing staff for the utilization of women	24%	52%	--	14%	10%
g. Promoting women in skilled jobs to the supervisory level	24%	48%	14%	14%	--

included the statement in employee handbooks and discussed the policy in special workshops with managers and supervisors.

One of the three firms did not find special recruitment efforts necessary to attract women into nontraditional blue-collar jobs, but the other two firms replied primarily on internal recruitment. There was no consensus among the three personnel administrators concerning the most effective methods of recruiting women. Word-of-mouth referrals, internal publicity to female employees, and tours of the work environment were cited as strategies for recruiting women.

The firms from whom data were obtained relied primarily on informal selection and placement procedures rather than on formal screening tests. In two of the three firms, personnel interviewers receive explicit training concerning sex bias and sex discrimination. In all three firms there was a special equal employment opportunity coordinator. One firm also offered special assistance to prepare women for entry into predominantly male work crews. The special program included counseling tours, and "career exposures." However, all three companies said they organized special meetings or seminars with managers and front-line supervisors to discuss the utilization of women in nontraditional jobs or to sensitize them to the problems of women in nontraditional work situations.

Training for skilled blue-collar jobs was available in the three firms. On-the-job training was the mode of training used in all cases. None of the firms had an upper age limit for entering training. When asked about reasons for dropping out of training, two of the three personnel officers thought that pregnancy and the physical demands of the work were more likely to be reasons for women than men dropping out.

With regard to pregnancy-related policies, two of the three companies required neither prenatal nor postnatal leave. The third firm requires their pregnant employees to leave in their eighth month and to return no sooner than 6 weeks after delivery. All of the companies permitted women to return to their jobs, usually if they returned within four months of delivery. One of the organizations offered an 8 week, 100 percent paid maternity leave.

Returning finally to the manager's questionnaire, respondents were asked why they felt their firm was stepping up its utilization of women in blue-collar jobs. As shown in Table 7, the reason most commonly cited as "extremely important" was the desire to comply with legal requirements, but the second most important reason was the desire to give women the opportunity to develop a skill and earn good wages.

Both supervisors and managers were asked, in an open-ended question, what they perceived to be the most positive and negative aspects of having women in skilled blue-collar jobs. The majority of the "negative" comments related to difficulties with some male coworkers; the high failure rate for women who lack prerequisite skills; the assignment of some women to jobs they can't handle; the problem of potential reverse discrimination; and the social isolation of some women. On the positive side (and positive comments were more frequent than negative comments), a large number of respondents felt that hiring women provided a broader pool of talent for specific jobs;

TABLE 7

Perceived Importance of Various Reasons for Increasing Utilization of Women in Skilled Blue-Collar Jobs

	EXTREMELY IMPORTANT	MODERATELY IMPORTANT	SLIGHTLY IMPORTANT	NOT IMPORTANT
a. Desire to comply with legal requirements	55%	18%	23%	5%
b. Pressure from female employees	5%	27%	59%	9%
c. Pressure from external agencies or groups, such as women's groups, educational institutions, etc.	---	5%	59%	36%
d. Concern with the possibility of a class-action suit	23%	18%	45%	14%
e. Desire to give women a chance to develop a skill and/or earn good wages	27%	46%	18%	9%
f. Shortage of personnel in skilled areas	5%	23%	41%	32%
g. Desire to remedy previous discrimination	14%	18%	55%	14%

helped to change the attitudes of men and broke down sex-role stereotypes; provided a more natural environment in terms of the sex composition, resulting in a healthy atmosphere; generated considerable enthusiasm on the part of women; offered women the opportunity to achieve their potential; and improved in general the quality of work life.

Finally, the last question on the managers' and supervisors' questionnaire asked respondents "Can you offer any recommendations to the Air Force concerning policies for the utilization of women in blue-collar careers?" A large number of respondents encouraged the Air Force to do careful planning and preparation before bringing women into nontraditional jobs in large numbers. As one respondent put it, "Be careful, pave the way well." Several people mentioned the need for an orientation or awareness program to introduce the program to males and to involve them in the planning. It was stressed by several that problems and goals should be shared with the entire community to be affected. Special orientation for women was also suggested, and it was recommended that women always be brought in in pairs or groups, and not alone. These suggestions all focus on ways of handling problems with interpersonal relations and self-perceptions which, according to these respondents' replies to another open-ended question, constitute the most negative aspects of hiring women for nontraditional blue-collar jobs.

Another class of recommendations focused on recruiting and training. Many respondents felt it would be beneficial for the Air Force to start recruiting or interesting young women in such jobs at a very early age, such as the junior or senior high school level. Some felt that the Air Force should play a role in encouraging educational programs to interest women in the trades. A number of respondents mentioned the importance of developing successful role models as a mechanism for recruiting and retaining women in nontraditional fields. It was noted by several that successful recruitment would involve aggressive recruitment. In the open-ended question on the negative aspects of having women in nontraditional crafts jobs, the low success rate of women was often mentioned; subsequently, suggestions were made to be careful about selecting women with a reasonable chance of success. The need for extensive, hands-on training was emphasized by both managers and supervisors.

Another broad category of recommendations concerned the overall approach to increasing the utilization of women. Numerous respondents strongly urged the Air Force to "treat men and women as equals." This advice was often given by those who were concerned with providing equal opportunity for women, but equally often by those who felt that men should not be treated unfairly because of goals and quotas. Several people advocated not emphasizing the nontraditionalness of the women's jobs. It was felt that most women entering crafts fields are not attracted to the jobs because they want to be pioneers, and that consequently the nontraditionalness of their roles should be underplayed. Finally, it was frequently mentioned that abilities and not sex should be emphasized. This advice appeared to stem as much from a concern for male backlash as from a concern that

women's self-esteem might be undermined by feeling they were selected or promoted only because they are women. As one respondent said, "Don't be overdramatic about women's policies."

DISCUSSION

On the whole, it would appear from an examination of the personnel administrator's data that the three firms who participated in the pilot stuay were fairly forward-looking in their policies designed to expand women's roles. It seems clear that considerable corporate attention had been paid to this problem in all three cases.

Information obtained from the managers and supervisors suggests that the reactions to women in nontraditional blue-collar jobs have been mixed, but the attitudes and perceptions of the sample were predominantly favorable. As a group, managers tended to have somewhat more positive opinions of women's capabilities and ultimate role integration, but the majority of supervisors also indicated favorable reactions. Both groups felt that men were superior to women with respect to several job-related characteristics, but by and large, women were not seen as particularly weak in any important area.

It would be desirable to infer that the generally positive outcomes, as perceived by the managers and supervisors, reflect the progress made by the three companies in designing policies aimed at facilitating women's participation in nontraditional careers. Unfortunately, without other companies as basis for comparison, this inference is difficult to support, but it does not seem unreasonable.

IV. RECOMMENDATIONS

This concluding section presents a series of recommendations for policies and practices which should facilitate the recruitment, training, retention and advancement of women in industrial career fields in the Air Force. These recommendations are based on a consideration of issues raised in the literature review, the preliminary data gathered in the pilot testing of the instruments, and the authors' experiences with issues relating to women workers. It should be pointed out that the policies and practices suggested here have not been tested in a rigorous way. However, we believe that most of these policies should be beneficial, if for no other reason than that their implementation would demonstrate the commitment of the Air Force to utilizing women in skilled industrial fields.

The recommendations are grouped in six main sections to enhance the usefulness of the suggestions: Organizational Audit Recruitment, Counseling, Training, Sensitizing and Communications.

RECRUITMENT

If the Air Force is committed to expanding the utilization of women in nontraditional roles, fairly aggressive recruitment strategies will probably have to be adopted. Recruitment for particular types of jobs can be accomplished both externally -- that is, attracting new recruits into the Air Force -- and internally by attracting women who may already be involved in a more traditional career field. For skilled industrial jobs, both strategies may well be needed.

In the pilot study, a number of participants recommended concentrating a strong recruitment effort on young women of high school or junior high school age. These young women are at the point where they are making a number of decisions about their careers. Early interest in Air Force career fields might encourage them to take relevant preparatory courses or to develop in other ways the prerequisite skills for skilled industrial jobs.

Although focusing a strong recruitment effort on young women is recommended, it may be easier to attract somewhat older women into nontraditional blue-collar fields. Teenagers are very strongly influenced by peer pressure, and there is still a considerable amount of pressure to be "feminine" and to conform to conventional sex-role standards. The woman in her middle or late 20's, on the other hand, is more likely to be secure in her femininity and to recognize that pursuing a nontraditional career will not necessarily conflict with that femininity. Furthermore, older women are more likely to have had experience with low-paying traditionally female jobs and may be more willing to learn about alternatives. Therefore, it might be advantageous for the Air Force, given the goal of increasing the proportion of women in skilled industrial fields, to raise the age limit for new recruits to at least 30 or perhaps even 35. It would also be helpful to seek avenues for publicizing such opportunities to women in their late 20's. These women would perhaps be somewhat more difficult to reach than high school students, but one likely source would be community colleges or other institutions offering educational opportunities to adults, such as the YWCA or post-secondary technical schools.

In general, recruitment should probably involve showing young women a range of alternatives and pointing out the advantages of nontraditional careers. In particular, job security and salary levels should be emphasized, since these factors have been found to play an important role in women's decisions to pursue a career in skilled blue-collar fields.

For recruiting purposes, a slide-and-tape or movie presentation would probably prove useful, particularly if these media clearly showed women working successfully, along with men, in skilled industrial jobs. However, as pointed out by respondents in the pilot survey, it is probably wise not to emphasize the nontraditionalness of the fields. Women pursuing this type of career are unlikely to want to be perceived as pioneers, in contrast perhaps, with those entering other career fields such as piloting. These women will have

to be "sold" a nontraditicnal career on its own merits. Having visual presentations with women portrayed as mechanics, electronics experts, and so should help to underplay the nontraditional aspects of these jobs.

It seems clear that recruitment personnel should be given extensive breifing on training concerning the Air Force goal to utilize women in nontraditional career fields. If the recruitment personnel do not take the goal seriously, or if they themselves have conflicting personal goals, then the recruitment effort will have difficulty in succeeding.

COUNSELING

An issue related to recruitment is counseling for women already enlisted in the Air Force. Career counseling is an ongoing Air Force program. Military personnel are counseled at specific times and at requested times. More women may be attracted to skilled industrial jobs if they thought the Air Force would assist them in making the transition to a civilian job in their field; therefore, counselors should have specific instructions regarding the counseling of women considering nontraditional fields.

Clearly counselors should never put pressure on women to pursue nontraditional careers. There is little chance of a person succeeding in a field in which they have no interest or motivation. Also, care should be taken to encourage only those women who have a reasonably good chance of success in skilled blue-collar work, according to prerequisite abilities. Failure is not only demoralizing for the individuals involved, but it may also reinforce negative stereotypes about women unable to do "men's work," thereby making it more difficult for other women to succeed in the future. In situations such as this, it takes great sensitivity and planning to avoid the "self-fulfilling prophecy."

In the counseling situation, as in the recruiting situation, the intrinsic rewards and advantages of nontraditional industrial jobs should be stressed, rather than their nontraditionalness. There is no point, either, in trying to glamorize the jobs. The realistic drawbacks of these fields should be pointed out -- e.g., the tiring physical nature of the work, and or getting one's hands dirty. These disadvantages can be described in a manner which demonstrates that, for many individuals, the advantages are more important considerations.

Finally, counselors should also receive training relating to Air Force goals and policies vis-a-vis women and should be sensitized to issues of sex bias and sex discrimination. In providing encouragement and support to women to pursue nontraditional careers, counselors should be careful to give women the feeling that they are receiving encouragement because they are qualified and will probably succeed -- not simply because they are women and will help the Air Force statistics concerning the utilization of women in new fields.

TRAINING

Successful training is probably more crucial for women entering traditionally male fields than it is for men. With women in the minority in such fields, it seems inevitable that a good deal of attention will be focused on them, and therefore their successes or failures will be more conspicuous than those of men.

Society is currently undergoing numerous changes with respect to sex role socialization, but the young women of today are unlikely to have had the same opportunities as young men to learn basic mechanical and electronic information and terminology. This fact undoubtedly accounts for at least some of the sex differences on the Mechanical and Electronics subtests of the ASVAB. Given this disadvantage of women, it would be extremely useful to offer brief pre-training instruction to women, to enhance their likelihood of successfully completing training. This instruction might be offered to those women who are within an acceptable range on the ASVAB test scores, or perhaps to those who are just under standard acceptable levels. Compensatory instruction of this type has successfully been used by the military in the past in "Project 100,000." The test should probably be readministered after instruction to determine the women's ultimate acceptability for training. The instruction should include both intensive classroom-type exposure to the basic principles and terminology in mechanics and electronics, as well as some hands-on exposure. This pre-training instruction would serve the dual purpose of better equipping women for training as well as helping women decide whether or not to pursue a career in that field. It might be useful to use women as instructors for such pre-training sessions, inasmuch as they would probably function as important role models. Such a conpensatory program should be established on at least a trial basis in order to evaluate its utility. Specialized training programs were found to be highly successful during the study of women in nontraditional jobs in public utility companies (Meyer & Lee, 1976).

In training itself, the Air Force should attempt, insofar as possible, to train two or more women together. Only one woman entering training in a nontraditional field will have a great deal of difficulty in coping with the demands being made upon her and will undoubtedly feel socially isolated.

The women entering traditionally male fields may need more help and moral support from their instructors than do their male counterparts (although if pretraining instruction is offered, this may be less true). However, the best overall strategy would be to treat male and female trainees as equals. If women are given an inordinate amount of attention or if they are treated more leniently than men, it is likely that the women will feel patronized, and the men will become resentful.

SENSITIZING

One of the most significant problems in utilizing women in nontraditional fields appears to be the interpersonal difficulties which arise. Sex-role stereotypes and attitudes about women's proper sphere of activity cannot be changed overnight. Many men probably feel resentful and threatened by women's entrance into "male" fields, and may try to resist it. This resistance can take many forms, but whatever the form, it can result in considerable conflict and ultimate failure by the women. Therefore, an important avenue to successful utilization of women in skilled industrial fields is to offer sensitization workshops and training to affected males, particularly those who play an important role in implementing Air Force policies, such as training instructors, supervisors, and personnel staff. These sessions would focus on making men aware of the Air Force policies on women, the rationale for those policies, the myths concerning women's job characteristics, and the lack of evidence concerning the validity of those myths. Those men in key roles implementing Air Force policies should be shown the importance of their roles, the value of their inputs for handling the policies, and their responsibility for making the policies work.

It may also prove useful to sensitize workers (both male and female) to the need for cooperation, discretion, and openness in working with opposite sex peers. Ultimately, the success of integrating women into skilled industrial fields depends on the ability of coworkers to be congenial and to accomplish their work. The Air Force, through its Human Relations training, has made a start on addressing the roles of men and women. However, added emphasis for women and men involved with nontraditional fields would be of value.

COMMUNICATION

Air Force policies and programs concerning women need to be made visible through a number of communication channels. Awareness programs such as those described constitute one such channel, but others also need to be explored. Items in the Air Force newspaper are certainly one important medium for communicating to Air Force personnel. A separate newsletter specifically for and about women, might be useful in keeping women up to date on issues which concern them.

Communication should work two ways. The Air Force should also develop mechanisms for women (and men) to provide feedback concerning specific policies and practices and their manner of implementation. As new policies are developed, input should be sought from those who will be directly affected by them. A number of approaches can be used to facilitate such communication: special surveys, workshops, suggestion boxes, and so on.

One general aspect of communication deserves comment. The military, like most institutions in our society, uses a considerable amount of overtly sexist language. Phrases such as "manning" (instead of staffing), and "man hours" (instead of person hours) and the use of the generic "he" do little to convince women that they are rightful and important members of the Air Force community. The problem may seem trivial, but the psychological consequences of sexist language may be profound. If the Air Force wants to assure women that efforts to utilize them more broadly and effectively are serious, then the elimination of sexist language from both oral and written communications should be sought. People will not be able to change their expressions and manner of speech overnight. The Air Force is conducting a review, in accordance with Department of Defense guidance, of all publications to eliminate and avoid using, whenever possible, masculine or feminine gender, third person, singular pronouns when both sexes are involved. In particular, attention should be paid to removing sexist language from training, selection and recruitment materials.

In conclusion, it will not be possible or even desirable for the Air Force to implement all of the recommendations in the near future. Changes of the kind implied throughout this report cannot be abrupt, but rather must be introduced in a manner consistent with the psychological needs of those affected.

APPENDIXES

APPENDIX A

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Results of a study of women in apprenticeship programs in the skilled trades, examples of programs designed to increase the number of women in such programs, and specific examples of pay and working conditions in various trades.

Bane, M.J. Sexual equality (economics department). Across the Board, March, 1977, 12-23.

A discussion of the pursuit of sexual equality in the areas of maternity, child care, and housework. Three possible approaches to progress in these areas are (1) to leave the responsibility with women as it is now, (2) to transfer responsibility to society as a whole, and (3) to equalize responsibilities between husbands and wives. A combination of (2) and (3) is seen to be the most workable.

Barnes, W.F., & Jones, E.B. Manufacturing quit rates revisited: A cynical view of women's quit rates. Monthly Labor Review, 1973, 96, (12), 53-56.

A cynical explanation of the reduction of the female worker quit rate.

Bartol, K.M. Male versus female leaders: The effect of leader need for dominance on follower satisfaction. Academy of Management Journal, 1974, 17, 225-233.

Results of a study of a stimulated business game involving male and female participants which found greater group satisfaction from male group members with a female leader with a high need for dominance than vice versa.

Bartol, K.M., & Butterfield, D.A. Sex effects in evaluating leaders. Journal of Applied Psychology, 1976, 15, 221-236.

Subjects of this study were asked to evaluate leadership styles from hypothetical case studies in which the sex of the manager was the manipulated variable. Results found that females were evaluated more favorably on consideration behavior, and males more favorably on structuring behavior.

Bass, B.M., Krusell, J., & Alexander, R.A. Male managers' attitudes toward working women. American Behavioral Scientist, 1971, 15, 221-236.

Belli, C. Outlook called good for women in business. Automotive News, August 2, 1976, 9.

Report of a speech by Martha W. Griffith concerning the growth of the women's movement, continuing discriminatory practices and the economic need for increased employment for women.

Bennett, G.K. Differential aptitude tests manual.(3rd ed.) New York: Psychological Corporation, 1959.

Bergman, B.R., & Adelman, I. The 1973 report of the President's Council of Economic Advisors: The economic role of women. American Economic Review, 1973, 68, 510.

An examination of factors which prevent the reality of equal opportunity for women in the labor force, and of the economic and social effects which might result from such equality.

Bernard, J. Women and the Public Interest. Chicago: Aldine Publishing Company, 1971. Coding is for Chapter 6: "The Jobs of Women" p.105-135.

An analysis of the number of women in unions, by year from 1952-1972, by industry, and by union. Details of women holding union office are included.

Berquist, V.A. Women's participation in labor organizations, Monthly Labor Review, 1974, 97, (10), 3-9.

Berwitz, C.J. The job analysis approach to affirmative action. New York: John Wiley & Sons, 1975.

A description of an affirmative action program which was established with the assistance of the government, in the hopes that it might serve as a prototype. The system adopted was

built upon the USES Analysis Formulation and the new Dictionary of Occupational Titles Worker Traits structure.

Biere, J., Bradburn, W.M. & Galinsky, M.D. Sex differences in perceptual behavior. Journal of Personality 1958, 26, 1-12.

Bigoness, W.J. Effect of applicants' sex, race, and performance on employers' performance ratings: some additional findings. Journal of Applied Psychology, 1976, 61, 80-84.

In this study, white male students were required to rate the task performance of male, female, white and black subjects. The raters clearly distinquished between high and low performers, but were biased by the ratees' sex and race.

Binkin, M., & Bach, S.J. Women in the Military. Washington D.C.: The Brookings Institution, 1977.

An overview of the historical trends and current policies regarding women in the military. It delineates the attitudinal, economic, and job-related problems which must be dealt with in the successful integration of women in the armed forces. The adjustment of equitable benefits, education, and possibility for promotion are discussed. The authors also examine the problems which the physiological and psychological differences between the sexes present to an institution undergoing significant change in sex composition.

Bowman, G.W., Worthy, N.B., & Greyser, S.A. Are women executives people? Harvard Business Review, 1965, 43, 14-16+.

This article presents statistical results, comments, and sample questions of a survey to assist attitudes toward women executives and to seek solutions to unequal opportunity for women.

Boyle, J.M. Equal opportunity for women is smart business. Harvard Business Review, 1973, May-June.

Description of a ten-step program for setting up an Affirmative Action program.

Briggs, N. Women apprentices: Removing the barriers. Manpower, 1974, 6, (12), 2-11.

This article summarizes the Women in Wisconsin Apprenticeships project. Numbers of women in apprenticeships before and after the project are given, and reasons for the exclusion of women from such programs are examined. The conclusion lists the

accomplishments of the project, and its recommendations.

Broverman, D.M., Klaiber, E.L., Kobayashi, Y., & Vogel, W. Roles of activation and inhibition in sex differences in cognitive abilities. Psychology Review, 1968, 75, 23-50.

Brown, C.D., Hefner, H.L., & Jarvis, C.L. Women in the reserve components: What are the real limits? Carlisle Barracks, Pa. Army War College, 1975.

A historical perspective of women in the reserves which examined the administration of and requirements for enlistment in the reserves. Recommendations for more stringent training and new policies for physical requirements for women are made.

Brown, G.D. How type of employment affects earnings differences by sex. Monthly Labor Review, 1976, 99, (7), 25-30.

Presents results of a study of earning differential between white men and women in government, private, and self-employment. Women were found to have the highest earnings in government employment, and the lowest when self-employed. The reverse was true for men.

Bulwick, H.C., & Elicks, S.R. Affirmative action for women: myth and reality. Berkeley, Ca.: Institute of Business and Economic Research, University of California, 1972.

Presents results of a survey of 27 firms in the San Francisco area. Women were found to be seriously underrepresented in management jobs. A majority of the firms were in the process of establishing affirmative action programs, but fewer than half had specific goals and timetables. Various aspects of the firms' policies are described, and comments are made about the deficiencies of the policies.

Burke, R.J. Differences in perception of desired job characteristics of the same sex and the opposite sex. Journal of Genetic Psychology, 1966, 109, 37-46, (a).

This study asked males and females to rank ten job characteristics for themselves and for the opposite sex. The actual ratings were similar for both sexes, but both sexes were unable to predict the preferences of their own or the opposite sex.

Burke, R.J. Differences in perception of desired job characteristics of the opposite sex. Journal of Genetic Psychology, 1966, 109, 27-37, (b).

This study asked males and females to rank ten job characteristics for themselves and for the opposite sex. The actual rankings were similar for both sexes, but males were found to be inaccurate in predicting female rankings.

Butterfield, D.A., & Powell, G.N. Evaluations of leadership behavior: Do sex or androgyny matter? Paper presented at American Psychological Association Convention, San Francisco, 1977.

Results of a study of the evaluation of leadership, broken down by the sex of the leader, sex of the evaluator, androgyny of the evaluator, and occupational level of the evaluator. Occupational level was found to be the best predictor, in contrast with a previous study, implying that sex role stereotyping may be decreasing.

Byham, W.C., & Spitzer, M.E. The Law and Personnel Testing. American Management Association, 1971.

This book examines the practical problems involved in using personnel tests for employee selection, within the context of equal employment opportunity laws and court rulings. It offers guidelines to executives concerned with the use of tests and alternatives in order to comply with affirmative action requirements.

Calene, M. Changing acceptable occupations for military and civilian women: The effects of two world wars. Monterey, Ca Naval Postgraduate School, 1975.

The effects of industrialization upon the development of women's participation in the labor force in the last 100 years. Historical notes on World Wars I and II supply evidence of the dependence upon civilian female employees that the U.S. experienced in the first half of this century. Financial necessity, the results of education for large numbers of women, and the diminishing need for full-time housekeeping activities due to technological advances are among the reasons noted for the contemporary upsurge of women seeking paid jobs.

Carey,G.L. Sex differences in problem-solving performance as a function of attitude differences. Journal of Sociology and Abnormal Psychology, 1958, 56, 256-60.

Carlsmith, L. Effect of early father absence on scholastic aptitude. HER, 1964 34, 3-21.

Carter's job policy: A key role for business. Business Week, December 13, 1976, 63-64.

Details of a national manpower development program aimed at training hardcore unemployed workers for jobs in the private business sector through incentive programs.

Cassell, F.H., Director, S.M., & Doctors, S.I. Discrimination within internal labor markets. Industrial Relations, 1975, 14(3), 337-344.

Presents data on three forms of discrimination: job level at hiring, rate of wage increase, and opportunity for advancement. Blue and white-collar employees are covered, and results are broken down by race and sex.

Cecil, E.A., Paul, R.J., & Olins, R.A. Perceived importance of selected variables used to evaluate male and female job applicants. Personnel Psychology, 1973, 26, 397-404.

Results of a statistical study of variables used to evaluate job applicants, showing that females were assumed to be applying for a clerical job, and males for a managerial job.

Centers, R. & Bugental, D.E. Intrinsic and extrinsic job motivations among different segments of the working population. Journal of Applied Psychology, 1966, 50, 193-197.

This article presents findings that intrinsic job motivations were more valued at higher occupational levels, and vice versa. The only sex difference found was that women placed more value on "good co-workers" and men on the opportunity to use their skill.

Central All-Volunteer Task Force: Utilization of military women. (A report of increased utilization of military women, FY 1973-1977), 1972.

Changing Patterns. Manpower, 1974, 6, (12), 12-13.

An interview of a civilian employed as a journeywoman machinist at Robins Air Force Base in Georgia whose previous job experience was in traditional fields. She participated in a 4 year apprenticeship program registered with the Manpower Administration.

Citizens' Advisory Council on the Status of Women. Women in 1975. Washington: CACSW, 1976.

Clark, W.W. Boys and Girls- are there significant ability and achievement differences? P.D.K., 1959, 41, 73-76.

Cline, M.E., Holmes, D.S., & Werner, J.C. Evaluations of the work of men and women as a function of the sex of the judge and type of work. Journal of Applied Social Psychology, 1977, 7, 89-93.

This experiment asked men and women to evaluate sketches and quotations attributed either to men or women. Findings were that females gave higher ratings to the quotations of females, and males gave higher ratings to those of males, although there was very little difference in evaluation of sketches.

Cohen, S.L., & Bunker, K.A. Subtle effects of sex-role stereotypes on recruiters' hiring decisions. Journal of Applied Psychology, 1975, 60, 566-572.

Cohen, S.L., & Penner, L.A. Underutilization of women in the military work force as a function of sex-role stereotypes. U.S. Army Research Institute for Behavioral and Social Sciences, 1975.

A study conducted to determine the attitudes of civilian women toward an army career. It was concluded that "the most frequent discriminators between subjects with favorable and unfavorable reactions to the slides were the items concerning enlistment and general attitudes toward the army."

Cohen, M.S. Sex differences in compensation. Journal of Human Resources, 1971, Fall, 6(4), 434-447.

Five hypotheses explaining differences between men and women were examined: wage discrimination, occupational wage levels, job choice and working conditions, fringe benefits, and qualifications and productivity of women.

Cohn, J. Is business meeting the challenge of urban affairs? Harvard Business Review, 1970, 48, 68-82.

Report of a survey of 250 major U.S. firms, to identify the types of special hiring and training programs for minority group members. The results are presented separately for major types of industry.

Corson, J.E. Women in the armed forces: An historical summary. 1972, 10.

A general introduction of the history of women in the military. Specifically cited are the legal constraints which initially prevented enlistment and later thwarted the total utilization of female personnel in the armed forces. A discussion of the continually revised legislation which has been enacted to diminish military sex discrimination is summarized. Particular attention is paid to patterns of job assignments from the second world war until the present.

Costrich, N., Feinstein, J., Kidder, L., Maracek, J. & Pascale, L. When stereotypes hurt: 3 studies of penalties for sex-role reversals. Journal of Experimental Social Psychology, 1975, 11, 520-530.

Coye, B., Denby, S. Hooper, C.C., & Mullin, K. Is there room for women in Navy Management: An attitudinal survey. Naval War College Reveiw, 1973, 69-87.

Cutting the red tape of affirmative action. Business Week, September 13, 1976, 35-36.

Proposed revisions of the Labor Department's Office of Federal Contract Compliance Programs, which include reducing the number of companies covered, and establishing uniform review procedures.

D'Aprix, R.M. Blacks, women and the conscience of a company man. Business and Society Review, 1978, 18, 55-57.

A personal history of one man's attitudes toward minorities and women; their evolution and gradual liberalization.

Darley, S.A. Big-time careers for the 'little woman.": A dual-role dilemma. Journal of Social Issues, 1976, 32, 85-99.

A discussion of the conflict between the nurturing role of motherhood and the achievement oriented role of the career woman which attributes women's apparent lack of achievement to social factors.

Day, D.R., & Stogdill, R.M. Leader behavior of male and female supervisors: A comparative study. Personnel Psychology, 1972, 25, 353-360.

Reports finding that male supervisors who advance rapidly are rated as more effective and having more influence, while the rate of female advancement is unrelated to effectiveness.

Deaux, K. To err is humanizing. But sex makes a difference. Representative Research in Social Psychology, 1972, 3, 20-28.

This article presents findings that male performance is attributed to skill, female performance to luck, and that performance of a male task is seen as superior to that of a female task.

Deaux, J.E., & Taynor, J. Evaluation of male and female ability: Bias works two ways. Psychological Reports, 1973, 32, 261-262.

Defacto discrimination and how to kick the habit. (British -- no magazine name or date)

An examination of informal organizational discrimination against women in predominantly male fields; such as limited access to informal communication channels. The consequences of discrimination, both for women and the employer, are discussed and training programs to change male attitudes are described.

Defense Manpower Commission, Washington, D.C. Defense Manpower Commission Staff Studies and Supporting Papers, 1976.

Two papers specifically pertinent to discussion of women in the military: "Women in the Defense Establishment" and "Development and Utilization of Women in the Department of Defense." The first paper, authored by Dorothy Battle, provides information on the legal interpretation and logistical problems of integrating women in combat-related MOS's in each branch of the services. The second study (Landrum, 1976) presents a summarized report of policy changes regarding women that have evolved in the recent past.

Dichter, M.S. Employment discrimination: The class action from the defendant employer's perspective. Public Utilities Fortnightly, October 7, 1976.

Limited usefulness. See Wallace, R.B. & Millenson, D.A.

Dietz, J. Blue collar women: Up from the steno pool. Boston Sunday Globe, March 27, 1977. 64-65.

Specific examples of women in skilled trades in the Boston area; their pay rates, and the difficulties of entering such fields.

Diggin, T.E. Upward mobility-Tecom puts it all together. Public Personnel Management, 1974, 3(3), 230-232.

Description of a six-part program designed by the Army to promote upward mobility for lower-level employees.

Dipboye, R.L., Arvey, R.D., & Terpstra, D.E. Equal Employment and the interview. Personnel Journal, 1976, 55, 520-524.

Discusses problems of abandoning selection tests and using the "hiring interview" as the principal method of selecting new employees. Questions the validity of the selection interview, suggesting that minorities and women may be adversely affected by the subjectivity of this approach.

Dorling, J. Making a start on training for women. Personnel Management, 1975, December, 18-21.

The Training Services Agency presents suggestions for improving women's training through (1) improving training for present women's occupations, (2) expanding opportunities to train for other occupations, (3) providing special training to enable women to compete with men, and (4) assisting in influencing women's decisions about employment.

Einhorn, H.J., & Bass, A.R. Methodological considerations relevant to discrimination in employment testing. Psychological Bulletin, 1971. 75. 261-269.

Ells, S.C. How Polaroid gave women the kind of affirmative action program they wanted. Management Review, 1973, November, 62, (11). 11-15.

By concentrating on attitudes of women employees as revealed through in-house research, Polaroid has developed a meaningful affirmative action program, the Women's Action Plan. Two slide and tape shows have been produced to acquaint women employees with non-traditional job opportunities.

Ekpo-Ufat, A. Self-perceived abilities-relevant in the task: a potential predictor of labor turnover in an industrial work setting. Personnel Psychology, 1976, 29, 405-416.

Results of a study of the "workers self-perceptions of abilities relevant in the task" (SPART) test on auto assemblers. The test was found useful, but not for hiring purposes.

Employers step up programs to expand jobs for women and minorities. Chemical and Engineering News, October 25, 1976, 54, 38-47.

A descriptive article on the effects of chemical/engineering companies to expand hiring and promotion opportunities for women and minorities. Discusses the various policies and procedures adopted by a number of firms, such as awareness training sessions, self-awareness sessions, managerial evaluation based on success with affirmative action goals, special programs for high school students, etc.

Employment opportunity, how equal can it be? The Conference Board Record, September, 1975, 41-46.

A summary of the fair employment laws, and employers' responses to them, with a generalized proposal for the creation of new selection standards to assist management in the effective hiring of minorities.

Evans, V.M. Unisex jobs and nontraditional employment. Personnel, Nov.,Dec., 1975, 52(6), 31-37.

Suggestions to increase the number of women in nontraditional employment through strong management support, communication to the work force of the legal obligation of the company, and publicity of the jobs themselves.

Eyde, L.D. Eliminating barriers to career development of women. Personnel and Guidance Journal, 1970 (September), 49(1), 24-28.

Ferber, M.A., & Lowry, H.M. The sex differential in earnings: A reappraisal. Industrial and Labor Relations Review, 1976, 29, 377-387.

Women are rewarded less in the labor market than men, and direct discrimination causes differential behavior between men and women that further increases the gap in earnings. Discrimination introduced into the labor market is likely to produce effects considerably more far-reaching than the initial impact itself. Data used were taken from the U.S. Bureau of the Census publications.

Finegan, T.A. Participation of married women in the labor force. In C.B. Lloyd (ed.), Sex, Discrimination, and the Division of Labor. New York: Columbia University Press, 1975, 27-60.

Firms find few technical workers to fill women quotas. Industry Week, February 5, 1973, 180, 56.

Fisher, M.J. Pregnancy disability cost at $1.35 billion. National Underwriter, October 23, 1976, 80, (2).

Report of the Supreme Court appeal by G.E. of a lower court decision which found the company in violation of Title VII in its refusal to pay disability benefits for pregnancy. G.E. cited the excessive costs of such a program as the major reason for not providing benefits.

Fishman, J.A. Supplement to College Board Scores, (2), New York: CEEB, 1957.

Flanagan, R.J., Strauss, G., & Ulamn, L. Worker discontent and work place behavior. Industrial Behavior, 1974, 13, 101-123.

Job satisfaction issues and measures of job-behavior are examined from an economic point of view.

Flanders, D.P. & Anderson, P.E. Sex discrimination in employment: theory and practice. Industrial and Labor Relations Review, 1973, 26, 938-955.

This study shows the big three arguments against equal employment-men's and women's work, their traits, and their nonwage costs- were little differentiated by the data, although interview responses indicated firms either believed or rationalized women's traits as the major differential factor.

Follett, G.L., & Col, T.C. Lady soldiers in the 1970's. 1974.

The recruitment and training problems concerning women encountered by the U.S. Army reserves and the National Guard. The adoption of a program, Civilian Acquired Skill (CAS), which reduced the initial training period from eight to two weeks, has proved worthwhile in the recruitment of highly qualified females employed in the civilian sector.

Fottler, M.D. & Schaller, F.W. Overtime acceptance among blue collar workers. Industrial Relations, 1975, 14(3), 327-336.

It appears that an employee's personal and job characterisistics are more influential as determinants of over-time acceptance than are work values. Women, unmarried, older, low wage and high wage employees consistently refuse overtime. Both the income effect and the substitution effect dominate the sppply of overtime hours at different points as wage rates rise.

Frazier, N., & Sadher, M. Sexism in school and society. New York: Harper and Row, 1973.

Frings, C.L. The effect of the equal rights amendment on women in the military. Speech in Dacowits 1972 Fall meeting, November 12-16, 1972, Colorado Springs, Colorado.

Fuchs, E.F., & Hammer, C.H. A survey of women's aptitudes for Army jobs. Personnel Psychology, 1963, 16, 151-155.

Results of tests administered to high school seniors which sought to discover percentages of females with aptitude for various Army jobs. The number of females with qualifying scores on the electronic and motor areas was smaller than the number of qualifying males, but still significant.

Fuchs, V.R. Women's earnings-recent trends and long-run prospects. Monthly Labor Review, 1974, 97(5), 23-26.

A view that the earning differential between women and men is a clue to the social process of role differentiation which begins in childhood and affects all phases of labor force attachment.

Fuller, C.H. The role of women in the Navy: A study of attitudes and scale development. Navy Personnel Research and Development Lab.

Garron, D.C. Sex-linked, recessive inheritance of spatial and numerical abilities, and Turner's syndrome. Psychology Review, 1970, 77, 147-152.

Gaskell, H. Explaining the aspirations of working class girls. Paper presented at the AERA annual meeting, Washington, 1975.

Gates, M.J. Occupational segregation and the law. Signs, 1976, 1, 61-74.

An article which reviews both the laws which have contributed directly and indirectly to occupational segregation, and those which have been passed as remedial measures. Specific cases and decisions are cited.

General Electric. Maternity pay ruling may boost firms' insurance rates. Industry Week, April 22, 1974, 181, 24-26.

Report of a Federal District Court decision on a class action suit brought against G.E. on the grounds of sex discrimination in its denial to pay disability benefits for pregnancy. G.E.'s contention that the condition was voluntary and the price excessive were dismissed.

Georgine calls on building trades to recruit women for craft jobs. AFL-CIO News, 22(21): 3, 1977, May 28.

A letter outlining the need for sound affirmative action measures, as exemplified by successful apprenticeship Outreach programs. Positive steps to admit more women should include community publicity, school publicity and developing relationships with state and local women's organizations.

Gerner, J. Wisconsin maternity leave and fringe benefits: policies, practices and problems. Final Report to the U.S. Dept. of Labor, 1974.

An economic analysis of the EEOC guideline requiring that maternity leave be treated as a temporary disability, which estimates the possible cost to employers in the state of Wisconsin, examines the economic response to this cost and the implications of this cost, both specifically and as an example of fringe benefits in general.

Gesell, A. et al. The first five years of life. New York: Harper, 1940.

Glanstein, P., & Gable, R.K. Sex differences in career development. Paper presented at AERA annual meeting, San Francisco, April 1976.

Goldberg, P. Are women prejudiced against women? Transaction, 1968, 5, 28-30.

Goldman, N. The changing role of women in the Armed Forces. American Journal of Sociology, 1973, 78(4), 130-149. In J. Huber (ed.), Changing Women in a Changing Society.

Graf, R.G., & Riddell, J.C. Sex differences in problem-solving as a function of problem context. Journal of Educational Research, 1972, 65, 451-452.

Grauer, R.T. An automated approach to affirmative action. Personnel, 1976 (September), 53, 37-44.

Description of a computer-based system for job applicant information storage and retrieval to assist in filing affirmative action reports.

Greenwald, C. Maternity leave policy. New England Economic Review, 1973 (January), 13-18.

Gregory, C.W. Women in defense work during World War II: An analysis of the labor problem and women's rights. New York: Exposition Press, 1974.

Gross, B. Sex discrimination in employment. In New York Univ. proceedings of the 24th annual conference on labor, Institute of Labor Relations, New York City, July 1-3, 1971, 313-329.

A discussion of reasons why women work, the problems of their limited job opportunities and the waste of their resources resulting from underutilization. Also covers the effect negative attitudes of employers and unions have. The effort of government in Affirmative Action programs to eliminate discrimination is cited.

Gross, E. Plus ca change...? The sexual structure of occupations over time. Social Problems, 1968, 26, 198-208.

An examination of male and female participation in various occupations from 1910 to 1960, with findings that many jobs either remain segregated or become female jobs, and integration takes place only when men enter traditional female jobs.

Grossman, A.S. Women in the labor force: the early years. Monthly Labor Review, 1975 (Nov.), 98, 3-9.

Part of reprint "Women in the Labor Force."

Guetzkow, H. An analysis of the operation of sex in problem-solving behavior. Journal of Genetic Psychology, 1951, 45, 219-44.

Gurin, P., & Gaylord, C. Educational and occupational goals of men and women at black colleges. Monthly Labor Review, 1976, 99(7), 10-16.

Results of two studies which found that black women choose more conventional, less challenging career goals than black men.

Hagen, R., & Kahn, A. Discrimination against competent women. Journal of Applied Social Psychology, 1975, 5, 362-376.

Factorial analysis of the independent variables of the sex of subject, type of interaction, sex of other and competency of other in a simulated work situation. It was found that men only liked a competent woman when they were neither working with or against her.

Hamner, W.C., Kim, Jay, S., Baird, L., & Bigoness, W.J. Race and sex as determinants of ratings by potential employers in a simulated work-sampling task. Journal of Applied Psychology, 1974, 59(6), 705-711.

Female applicants rated higher than male for a male-dominated unskilled task.

Hardesty, R. The changing American workforce. American Federationist, 1972 (Nov.), 79, 14-19.

Discusses findings of the 1970 census concerning employment.

Harmon, Lenore, W. Anatomy of career commitment in women. Journal of Counseling Psychology, 1970, 17(1), 77-80.

Longitudinal study comparing 94 career committed and 75 non-committed women, showing that such commitment takes place after age 18.

Harmon, L.W. The childhood and adolescent career plans of college women. Journal of Vocational Behavior, 1971, 1, 45-46.

Harris, E. In the manner of Rosie the Riveter. Manpower, 1975 (Nov.), 7, 26-29.

Descriptions of various training programs for women offered through the Manpower Administration. 1) Work Incentive Program (WIN) for welfare recipients, which seeks to convince employers to eliminate sex bias, and to instill confidence in women participants, 2) On-the-job training (OJT), 3) Minority Women Employment Program, 4) Outreach program, 5) Research studies, 6) CETA, 7) Job Corps.

Hartman, H. Capitalism, patriarchy and job segregation by sex. Signs, 1967, 1, 137-169.

An historical view of the division of labor by sex, covering differing anthropological schools of thought on the origins of the patriarchical society and the emergence of the capitalistic system. The interaction of these has resulted in the sexual division of labor and male dominance.

Havinghurst, R.J., & Breese, F. Relation between ability and social status in a midwestern community. Journal of Educational Psychology, 1947, 38, 241-247.

Hayghe, H. Families and the rise of working wives - an overview. Monthly Labor Review, 1976, 99, 12-19.

An analysis of data on multi-worker families from 1950 to 1975, broken down by race, age of children, occupation, and income.

Healy, R., & Lund, D. Chapter 622: One state's mandate. Inequality in Education, 197: 36-46.

An article of Chapter 622, Massachusetts' legislation which outlaws sex discrimination in the schools. History, consequences, and responses are covered, with particular attention to the potential impact for females in vocational schools.

Hedges, J.N. Women workers and manpower demands in the 1970's. Monthly Labor Review, 1970 (June), 93, 19-29.

An article outlining the present concentration of women in certain occupations, and characteristics of women in the labor force. The future prospects of professional occupations for women in traditional and nontraditional fields are discussed, along with specific skilled trades suitable for women.

Hedges, J.N. Absence from work: A look at some national data. Monthly Labor Review, 1973, 96(7), 24-30.

Data on unscheduled absences obtained from the Current Population Survey, analyzed by industry, occupation, and worker characteristics.

Hedges, J.N., & Bemis, S.E. Sex stereotyping: its decline in skilled trades. Monthly Labor Review, 1974, 97(5), 14-21.

A consent decree signed in January 1973 by AT&T signalled the arrival of employment discrimination on the basis of sex as a matter of concern equal to employment discrimination on the basis of race. The decade of growth, educational gap narrows, the women in skilled occupations, the rebirth of the feminist movement, and women's future are discussed by the author.

Herman, D.D. More career opportunities for women: whose responsibility? Personnel Journal, 1974, 53, 414-417.

A discussion of, primarily, sex-role stereotyping and occupational segregation. Mentions some steps which companies can take to advance women.

Herzberg, F., & Lepkin, M. A study of sex differences on the PMA test. Educational and Psychological Measurement, 1954, 14, 687-689.

Herzberg, F., Mausner, B., & Snyderman, B. The Motivation to Work. New York: Wiley & Sons, 1959.

Higgins, J.M. A manager's guide to the equal opportunity laws. Personnel Journal, 1976 (August), 55, 406-412.

Higgins, J.M. The complicated process of establishing goals for equal employment. Personnel Journal, 1975 (Dec.), 54, 631-636.

Offers a step-by-step guide to fulfilling EEO requirements for utilization analysis and employment goal-setting for minorities and females.

Hilaael, T.M. A three-step plan for implementing an affirmative action program. Personnel Administrator, 1976 (July), 21, 35-39.

Broad guidelines for setting up or reviewing an affirmative action program; from the establishment of organizational responsibility, to the conduct of an audit of affected personnel and a review of payment and promotion, selection, recruiting, testing, and placement procedures, leading to the implementation of policy.

Hobson, J.R. Sex differences in PMA's. Journal of Educational Research, 1947, 41, 126-132.

Hogan, P. A woman is not a girl and other lessons in corporate speech. Business and Society Review, 1975, 14, 34-38.

An article giving examples of sex-bias toward female employees as expressed in male speech patterns. Excerpts from the McGraw-Hill Guidelines for Treatment of the Sexes present alternative non-sexist word choices.

Hollander, J. A step-by-step guide to corporate affirmative action. Business and Society Review, 1975, 15, 67-73.

A detailed ten-point program to assist employers in setting up an effective and workable affirmative action program.

Holley, W.H., & Field, H.S. Equal employment opportunity and its implications for personnel practices. Labor Law Journal, 1976, 27, 278-286.

Discusses a number of personnel practices (recruitment, promotion, training, discharge, etc.) in terms of current interpretation of equal employment opportunity laws. The article reviews relevant court decisions on which these interpretations are based.

Horner, M. Fail: Bright women. Psychology Today, 1969, 3(6), 45-56.

Isambert-Jamati, V. Absenteeism among women workers in industry. International Labour Review, 85(2), 1962, 248-261.

A detailed study of frequency of employee absenteeism, with table illustrating correlation by age, sex, occupational category and family status. It was found that women had a higher rate of absenteeism, but that the rate decreased as training and responsibility increased.

Jacobson, C.J. Women workers: Profile of a growing force. American Fed, 1974 (July), 81, 9-15.

Jusenius, C.L., & Sandell, S.H. Barriers to entry and re-entry into the labor force. Paper presented at the Workshop on Research Needed to Improve the Employment and Employability of Women, June 1974.

A review of the literature on women's participation in the labor force, with findings that the barriers to employment of women on the demand side have received less attention than those on the supply side. Areas for further research are covered.

Kaley, M.M. Attitudes toward the dual role of the married professional woman. American Psychologist, 3(26), 301-307.

Kane, R.D., Frazee, P., & Lee, E. A study of the factors influencing the participation of women in nontraditional occupation in post-secondary area vocational training schools. Final Report to the Office of Education, 1976.

A comparative study of nontraditional, mixed, and traditional students. Nontraditional students were found to be older, more urban and were influenced in their occupational choice by post-secondary men teachers rather than by career education programs. They felt unprepared by their high school education for their training, primarily through the lack of science and math courses. The women who experienced most problems in training were in their twenties, and in classes with the fewest women. Motivating factors for non-traditional career choice were interest and ability rather than earnings.

Kantor, J.E. Research on utilization of women in the Air Force.

A discussion of research conducted by the Air Force to determine aptitude and suitability of women to nontraditional assignments in this branch of the military. Specific areas of concern include the screening, selection, and assignment procedures, applicable to both sexes, and the determination of factors which affect training and job performance.

Kiesler, S.B. Actuarial prejudice toward women and its implications. Journal of Applied Social Psychology, 1975, 5, 201-216.

Kilbridge, M.D. Turnover, absence and transfer rates as indicators of employee dissatisfaction with repetitive work. Industrial and Labor Relation Review, 21-32.

A study of turnover, absence and transfer rates in two companies with the data classified by type of work and sex of worker. The repetitiveness of work was found to be less significant a factor than sex, age, and job conditions as an indicator of employee dissatisfaction.

Kinzer, N.S. Historical and cross-cultural perspectives on women in combat. Arlington, Va., U.S. Army Research Institute, 1976.

An examination of women in combat roles as members of organized armies. This section specifically cites the performance of women during WWII in European nations and also supplies references to U.S. Army Nurse Corps personnel during this period. Briefly discussed are women guerillas in non-European areas. It is noted that as the enlistment of women into the military escalates, and as regulations (within the army) change regarding the training of women in defensive weapons, the probability increases that women may fill positions in combat arms units.

Kistler, L.H., & McDonough, C.C. Maternity leave: Sharing the cost of motherhood. Personnel, Nov -Dec. 1975, 52, 57-64. (a)

See Paid Maternity Leave, Benefits May Justify the Cost.

Kistler, L.H., & McDonough, C.C. Paid maternity leave - benefits may justify the cost. Labor Law Journal, Dec. 1975, 26, 782-794. (b)

Results of two studies, one of three companies which now provide paid maternity leave, and one of ten insurers who offer maternity leave options under disability coverage. Costs of paid maternity leave were found to be lower than previously estimated.

Klein, D.P. Women in the labor force: The middle years. Monthly Labor Review, 1975 (Nov.), 98, 10-16.

Part of reprint, "Women in the labor force."

Koch, H.L. The relation of "PMA's" in five- and six-year-olds to sex of child and characteristics of his siblings. Child Development, 1954, 25, 209-223.

Koontz, E.D. The progress of the woman worker: an unfinished story. Issues in Industrial Society, 1971, 2.

Kostik, M.M. A study of transfer: Sex differences in the reasoning process. Journal of Educational Psychology, 1954, 45, 449-458.

Kreps, J. Sex in the Marketplace: American Women at Work. Baltimore: Johns Hopkins University Press, 1971.

Landy, F., Rosenberg, B.G., & Sutton-Smith, B. The effect of limited father absence on cognitive development. Child Development, 1969, 40, 941-944.

Lapidus, G.W. Occupational segregation and public policy: A comparative analysis of American and Soviet patterns. Signs, 1976, 1, 119-136.

An examination of Soviet women's participation in the labor market, with findings that occupational segregation exists in spite of educational efforts and public policies designed to support high levels of female employment. Tables illustrating labor force participation rates and average earnings by economic sector are included.

Laws, J.L. Psychological dimensions of women's work force participation. Sloan Management Review, 1974, 15(3), 49-51.

Analysis of the psychological aspects of a woman's occupational participation should examine social and work environment and external and internal incentives that affect her work-motivation and job-performance. Although it has been asserted that a woman's interest in work is not as high as a man's, studies on work motivation strongly suggest that what is observed is a class effect rather than a sex effect.

Laws, J.L. Work aspiration of women: False leads and new starts. Signs, 1976, 1, 33-49.

A discussion of the motivation of women's work aspiration, which enumerates prevalent myths, the weaknesses of current research and social factors. Sex-role issues and possible means of neutralizing sex-role conflicts are also covered.

Lecht, L.A. Women at work. The Conference Board Record, 1976 (Sept.), 13, 16-21.

Suggested programs to free women from current occupational stereotypes through greater emphasis on lifetime learning, counseling for second careers, and training programs for adults.

Lehman, P. Cutting sex bias out of vocational education. Worklife, 1977 (Feb.), 3-5.

Factual report of the current state of sex bias and sex-role stereotyping in vocational education, and of programs which are attempting to eliminate it and open all careers to both sexes.

Leopold, A. The feminist evolution: Making it in a male chauvinist industry. Electronic News, September 13, 1976, 21, 4.

Brief interviews with nine women who have achieved management careers in the electronic industry, detailing their entry to the field and their advancement.

Levitin, T, Quinn, R.P, & Staines, G.L. Sex discrimination against the American working woman. American Behavioral Scientist, 1971, 15, 237-254.

Limits urged on scope of sex bias decision. AFL-CIO News, May 1977, 22(21), 4.

Linden, F. Woman, worker. Across the Board, March 1977, 25-27.

A profile of women in the labor force, examined by age, education, residence, age of children, and family and husband's income level.

Lloyd, C.B. (Ed.). Sex, discrimination and the division of labor. New York: Columbia University Press, 1975.

Longridge, T.M., Jr. Training of enlisted women as jet aircraft maintenance specialists. Sheppard Air Force Base, Texas, 1974.

A comparison of males and females in training as jet aircraft maintenance specialists. Although the women were significantly older and had more education, they experienced greater difficulties in this job specialization. A larger percentage of women who did not achieve the minimum standard on the mechanical aptitude test, lack of physical strength, and lower course grades contributed to females producing proportionately fewer graduates. Recommendations were made to enforce more stringent selection of women applicants.

Lopez, F.M. Employment opportunity - how equal can it be? The Conference Board Record, September 1975, 12, 41-46.

Louviere, V. How women's drive succeeds in a man's world.. Nation's Business, 1976 (April), 64, 38+.

Lund, R.T., & Bumstead, D. Inverse seniority - timely answer to the layoff dilemma. Harvard Business Review, 1975, 53(5). 65-72.

A proposed solution to the conflict of seniority rights and equal opportunity legislation through inverse seniority, which permits the most senior employees to elect temporary layoff. Such plans are currently in use in the agricultural implement and construction equipment industries.

Lyle, J.R. Affirmative action programs for women: a survey of innovative programs. Report submitted to the Equal Employment Opportunity Commission, 1971.

The first part of this report reviews research findings concerning the status of women in the American economy. Case studies of the affirmative action programs of 10 firms are presented in Chapter II. A final chapter presents findings from a components analysis which sorted out characteristics of firms as they impact on occupational sex segregation.

Maccoby, E. (Ed.). The Development of Sex Differences. Stanford, Cal: Stanford University Press, 1966.

Maccoby, E.E., & Rau, L. Differential Cognitive Abilities. Cooperative Research Project No. 1040, Office of Education, 1962.

Manis, L.G., & Mochizuki, J. Search for fulfillment: a program for adult women. Personnel and Guidance Journal, March 1972, 50(7).

A re-entry program with goals to 1) provide support, 2) improve communication, 3) build self-confidence, 4) build responsibility and 5) learn about opportunities available.

Maier, N.R.F. Male versus female discussion leaders. Personnel Psychology, 1970, 23, 455-461.

A problem-solving experiment which compared male and female leadership styles. Females were found to be less dominant in unstructured situations.

Mapp, P. Women in apprenticeship - why not? Madison, Wisc.: Wisconsin State Dept. of Industry, Labor, and Human Relations, 1973. See esp. pp 33-40 and pp 165-173.

Final report of a three year research demonstration project, with data from employers' survey, women apprentices' survey and employers of women apprentices' survey.

Martin, C.R. Support for women's lib: Management performance. The Southern Journal of Business, 1972, 7, 17-28.

A twelve-point comparison of male and female department store furniture buyers which found that males received higher pay and were granted more decision-making discretion than females.

Massachusetts Advocacy Center. Equal opportunity denied: Vocational education in Massachusetts. Boston: Mass. Advocacy Center, 1976.

Statistical data on sex discrimination in Massachusetts vocational schools; Regional and Boston and Springfield metropolitan areas. Also data on program enrollment within five schools broken down by sex.

Mathews, J.J. A sex comparison of reasons for attrition in a male-dominated occupation. Personnel Psychology, 1974,27, 535-541.

Results of a study of job terminations of air-traffic-control trainees, which found the major causes to be training difficulties, family, other employment and perceived discrimination.

Mattila, J.P. Labor turnover and sex discrimination. Working paper 1974-01-Industrial Relations Center, Iowa State University, 1974.

McCune, S. Vocational education: A dual system. Inequality in Education, 197 , 28-34.

An overview of sex-role stereotyping in the schools, particularly in vocational schools, with recommendations for remedial action to be taken at the Federal, state and local level.

McEaddy, B.J. Women in the labor force: The later years. Monthly Labor Review, 1975 (Nov.), 98, 17-23.

Part of reprint "Women in the labor force."

McEaddy, B.J. Women who head families: A socioeconomic analysis. Monthly Labor Review, 1976, 99(6), 3-9. (Also special labor force report 190, Bureau of Labor Statistics).

Presents conclusions that the number of families headed by women is increasing, particularly those below the poverty level. Adequate income is prevented by the women's lack of training and education, and their child care responsibilities.

McGuire, C. Sex-role and community variability in test performances. Journal of Educational Psychology, 1961, 52, 61-73.

McMillin, M.R. Attitudes of college men toward career involvement of married women. Vocational Guidance Quarterly, September 1972.

Results of a study of male students' attitudes toward career options analyzed by students' major.

McNemar, Q. The revision of the SB scale: an analysis of the standardization data. Boston: Houghton Mifflin, 1942.

Megargee, E.I. Influence of sex roles on the manifestation of leadership. Journal of Applied Psychology, 1969, 53, 377-382.

Presents results of experiments pairing high- and low-dominance men and women while performing an industrial and clerical task. High dominance women assured leadership least often in conjunction with low dominance men, which was attributed to sex role conflict.

Mellone, M.A. A factorial study of picture tests for young children. British Journal of Psychology, 1944, 35, 9-16.

Merrion, P.B. Pregnancy ruling faces new battle in Congress. Business Insurance, December 13, 1976, 10, p. 1, 67.

Congressional personnel are already preparing legislation to get around the Supreme Court decision that excluding pregnancy from disability insurance is not discriminatory.

Meyer, H.H., & Lee, M.D. The integration of females into male-oriented jobs: Experience of certain public utility companies. Tampa: University of South Florida, 1976.

Results of a study of 386 individuals in ten utility companies regarding their experience with women in non-traditional jobs. The attitudes of the women themselves, their managers, peers and subordinates were examined, with findings that the majority of the experiences were positive, although women in blue collar jobs had more difficulties than those in white collar jobs.

Miete, J.A. Sex differences in intelligence: The relation of sex to intelligence as measured by the WAIS and WISC. Dissertation Abstracts, 1958. 18(2), 213.

Millenson, D.A. Title VII Class Actions: The government perspective. Public Utilities Fortnightly, 1976 (Oct. 7), 98, 59-60.

A legalistic explanation of the class action suit in regard to the Civil Rights Act from the government point of view.

Miller, J., Labovitz, S., & Fry, L. Inequities in the organizational experience of women and men. Social Forces, 1975, 54(2), 365-381.

Miller, J.B. On women: New political directions for women. Social Policy, 1971 (July/August), 2(2),32, 40-45.

Thoughts on ways to connect the anger and "raised consciousness" of the women's movement with a woman rooted political framework based on the concerns shared by women with other oppressed sections of society.

Milton, G.A. The effects of sex-role identification upon problem-solving skill. Journal of Abnormal Social Psychology, 1957, 55, 208-212.

Milton, G.A. Sex differences in problem-solving as a function of role appropriateness of the problem context. Psychological Reports, 1959, 5, 705-708

Mitchell, B. Women with a lot of voltage. Worklife, 1977, April, 28-30.

Description of a pre-apprenticeship training program for 20 electrician apprentices, funded through CETA, and sponsored cooperatively by the Lansing Tri-County Manpower Consortium, Lansing Community College, Michigan, and the local branch of the International Brotherhood of Electrical Workers.

Most firms limit work of expectant mothers. Administrative Management, 1971 (April), 50.

Summary of a survey of 219 companies about their personnel policies regarding pregnancy. Major findings were that most firms required women to leave before the sixth month, limited maximum maternity leave to six months, and guaranteed re-employment, although not necessarily in the same job.

Murphy, I.L. Public Policy on the Status of Women. Lexington, MA: D.C. Heath & Co., 1973.

A history of the recent changes in participation in the women's movement, as growing awareness of discrimination among professional, working class, and blue-collar women led to their increased activism. Specific cases of women taking legal action to redress sex-bias in hiring are mentioned.

Neill, S.B. Job Corps charts a coed course. Worklife, 1977 (Feb.), 6-11.

An article on the positive aspects of changing the Job Corps Centers from single-sex to coed in compliance with Federal legislation. The increased exposure of both sexes to non-traditional jobs is cited as an example.

Nakamura, C.Y. Conformity and problem-solving. Journal of Sociology and Abnormal Psychology, 1958, 56, 315-320.

Newgarden, P. Establishing affirmative action goals for women. Public Administration Review, 1976, 36, 369-374.

Discusses the use of population statistics as a basis for determining affirmative action goals.

Nicholson, N., & Goodge, P.M. The influence of social, organizational, and biographical factors on female absence. Journal of Management Studies, 1976, 13, 234-254.

Results of a statistical survey of female employees of a single plant, using data from employee files. Four separate types of absence were identified and studied, plus lateness. There was found to be little overlap between lateness and absence. Biographical factors, especially age, were found to be the strongest predictors of non-sickness absence. The conclusion deals with the implication of the study to assist management in controlling absence.

Niemi, B. Geographic immobility and labor force mobility: A study of female unemployment. In C.B. Lloyd (Ed.), Sex, Discrimination and the Division of Labor. New York: Columbia University Press, 1975, 61-89.

Niemi, A.W. Sexist earnings differences: The cost of female sexuality. American Journal of Economics and Sociology, 1977 (Jan.), 36, 33-40.

Comparison of male and female earnings by education, race, sex, and age during 1969-70 and analysis of the differences indicate that discrimination against women is very costly to females, White and Black, especially those with a college education.

Norman, R.D. Sex differences and other aspects of young superior adult performance on the Wechsler Bellevue. Journal of Consulting Psychology, 1953, 17, 411-418.

Now women want a say in running unions. Industry Week, June 17, 1974, 181, 15.

The Coalition of Labor Union Women is aimed at ending job-discrimination, organizing more women workers, and increasing the number of female labor officials.

Oaxaca, R.L. Some observations on the economics of women's liberation. Challenge, 1976 (July), 19, 29-33.

A theoretical discussion of the economic effects of women's participation in the labor force, with emphasis on the occupational segregation of women.

Oldfield, J.D. A case study on the impact of public policy affecting women. Public Administration Review, 1976, 36, 385-389.

A history of the Connecticut Permanent Commission on the Status of Women.

O'Leary, V.E. Some attitudinal barriers to occupational aspirations in women. Psychological Bulletin, 1974, 81, 809-826.

A review of the literature is presented focusing on those external and internal attitudinal barriers which may interact to inhibit the woman worker from engaging in the kinds of achievement-directed behavior necessary to ensure her promotion into managerial positions.

One hundred top corporate women. Business Week, June 21, 1976, 56-67.

Oppenheimer, V.K. The Female Labor Force in the United States. Berkeley, CA: Institute of International Studies, U. of Cal., 1970.

Oppenheimer, V.K. The sex-labelling of jobs. Industrial Relations, 1968, 7, 219-234.

Osborn, R.N., & Vicars, W.M. Sex stereotypes: An artifact in leader behavior and subordinate satisfaction analysis? Academy of Management Journal, 1976, 19, 439-449.

Good references and review.

Osborne, R.T., & Sanders, W.B. Variations in graduate record examination performance by age and sex. Journal of Gerontology, 1954, 9, 179-185.

Patterson, D.G., & Andrew, D.M. Manual for the Minnesota Vocational Test for Clerical Workers, New York: Psychological Corporation, 1946.

Peterson, D.G. Minnesota Mechanical Ability Tests. Minneapolis: U of Minnesota Press, 1930.

Pheterson, G.I., Kiesler, S.B., & Goldberg, P.A. Evaluation of the performance of women as a function of their sex, achievement, and personal history. Journal of Personality and and Social Psychology, 1971 19(1), 114-118.

Piacente, B.S., Penner, L.A., Hawkins, H.L., & Cohen,S.L. Evaluation of the performance of experimenters as a function of their sex and competence. Journal of Applied Social Psychology, 1974, 4, 321-329.

Polit, D.F. The implications of nontraditional work schedules for women. Urban and Social Change Review, 1978, (in press).

Porteus, S.D. The measurement of intelligence: 643 children examined by the Binet and Porteus tests. Journal of Educational Psychology, 1918, 9, 13-31.

Pospisil,V.C.Blue-collar women get organized. Industry Week, 1974 (April 14), 185, 23-28.

Article particularizing the organizing efforts of the Coalition of Labor Union Women(CLUW) and the Union Women's Alliance to Gain Equality(WAGE). Selected personal interviews with blue - collar women concerning scheduling difficulties, economic reasons for job choice, and adjustments with male coworkers are included.

Powell, G.N., & Butterfield D.A. Sex, sex-role identification, and the good manager. Paper presented at annual meeting of the Academy of Management, Kissimmee, Florida, 1977.

Results of a study of undergraduate and MBA students which found that a masculine manager was preferred by masculine, feminine and androgynous individuals. Implications were raised that sex-role identification was more critical in determining attitudes than sex, and that females saw good managers as being unlike themselves.

A pregnancy ruling that could cost $1.6 billion. Business Week, November 29, 1976, 41.

Report of a suit filed against GE to determine whether pregnancy is classed as a disability under the Civil Rights Act. Financial implications of a finding against GE, such as other benefit cuts, are discussed.

Purcell, T.V. How G.E. measures managers in fair employment. Harvard Business Review, 1974, 52, 99-104.

A description of a six-part equal opportunity and minority relations measurement format devised by G.E. which has been in use since 1970. Methods of arriving at an ideal minority population, and results of the program at G.E. are discussed. There is emphasis on the use of sanctions on managers as a means of increasing their motivation for equal opportunity.

Quinn, R.P., & Shepard, L.J. The 1972-73 quality of employment survey. Ann Arbor, Michigan: Survey Research Institute, 1974.

Raphael, E.E. Working women and their membership in labor unions. Monthly Labor Review, 1974, 97, (5), 27-33.

The article documents the differences in earning of women who are union members and those who are not, as well as the recent proportional decline in union membership. Other sections review the current status of legislation to guarantee equal rights for women, and the stance of labor unions with respect to equal employment opportunities for women.

Recommendations to halt discrimination in trade unions. Air Cond., Heat and Refrig. 1976, May 31, N138:30.

A summary of recommendations by the U.S. Civil Rights Commission to create effective means of correcting discriminatory practices in referral unions.

Reichart,P. Women at sea: A sinking ship Monterey, CA: Naval Postgraduate School, 1976.

The consideration of three propositions regarding the role of women in the Navy was examined by this thesis. The first proposal suggested a maintenance of the status quo, the second favored a decrease in women's participation, and the final proposal, which the author found most acceptable, recommended an expansion of women's roles. The study noted

the barriers faced by increased utilization. Suggestions for further research of the issue were made in the concluding chapter.

Richbell,S. De-facto discrimination and how to kick the habit. Personnel Management, 1976, 8(11), 42-45.

Roby, P. The conditions of women in blue-collar, industrial and service jobs. Paper presented at the Workshop on Research Needed to Improve the Employment and Employability of Women, June, 1974.

See Roby, P. The condition of women in blue-collar jobs.

Roby, P. The condition of women in blue-collar jobs. In J.R. Chapman (ed.) Economic independence for women. Beverly Hills: Sage Publications, 1976.

Suggests five areas for needed research on women in blue-collar jobs; 1) wages and working conditions, 2) opportunities for work, training and promotion, 3) government, company and union policies affecting living conditions, 4) policies affecting attitudes of employed women, and 5) union policies and practices. Priority for research is given to occupational health conditions and vocational education leading women to high-paying traditionally male jobs.

Roby, P.A. Toward full equality: more job education for women. School Review, 1976, 84, 181-211.

An article reporting the lack of vocational education related to the needs of women which exists in spite of the recent increase in vocational education funding. The institutional barriers in admissions, enrollment, and counseling are enumerated, and recommendations for equalizing voc. ed. opportunities for women are included.

Rosen, B, & Jerdee, T.H. Sex stereotyping in the executive suite. Harvard Business Review, 1974, 52, 45-58.

Presents results of a study of hypothetical situations involving male or female employees. Discrimination was revealed in greater concern for the careers of men, and in skepticism toward women's abilities to balance work and family demands.

Rosen, B. & Jerdee T.H. Effects of applicant's sex and difficulty of job on evaluations of candidates for managerial positions. Journal of Applied Psychology, 1974, 59, 45-58.

Rosen,B. & Jerdee, T.H. The influence of sex-role stereotypes on evaluations of male and female supervisory behavior. Journal of Applied Psychology, 1973, 57, 44-48.

Presents results of a study in which subjects were asked to rate supervisory styles. The manipulated variables were the sex of the supervisor and of the subordinates. The "reward" style was seen to be more effective for males and "friendly-dependent" for female supervisors.

Rosen,B. & Jerdee T.H. Influence of sex-role stereotypes on personnel decisions. Journal of Applied Psychology, 1974, 59, (1), 9-14.

Description of personnel decisions against women in promotions, development and training opportunities, and as supervisors.

Ryscavage, P.M. Measuring union-non-union earnings differences. Monthly Labor Review, 1974, 97,(12), 3-9.

New data are examined from the May 1973 current population survey and estimates of union-non-union differentials are presented for all workers and four race-sex groups. This study with a new body of data, indicated that union-non-union earnings differences are substantial, and even larger than those recently estimated. Charts.

Saleh, S.D., & Lalljee, M. Sex and job orientation. Personnel Psychology, 1969, 22, 465-471.

Savell, J.M., Woelfel, J.C., & Collins, B. Soldier's attribution of contemporary vs. traditional sex-role attitudes to themselves and others. U.S. Army Research Institute for the Behavioral and Social Sciences, 1975.

This article presents the results of a study to determine the attitudes of Army personnel toward women in the Army. Women saw themselves as having contemporary attitudes, while the majority of men in the Army were seen to have traditional attitudes.

Savell, J.M., Woelfel,J.C., & Collins,B. Attitudes concerning job appropriateness for women in the Army. U.S. Army Research Institute for the Behavioral and Social Sciences, 1975.

Sawhill, I.V. Women and children on their own. Challenge, 1976, Sept/Oct 19:32-24.

The number of families headed by women alone has increased dramatically, but women still suffer from lower income and fewer job opportunities.

Schein, V.E. The relationship between sex-role stereotypes and requisite management characteristics. Journal of Applied Psychology, 1973, 57, 95-100.

Schein, V.E. Relationships between sex-role stereotypes and requisite management characteristics among female managers. Journal of Applied Psychology, 1975, 60, 340-344.

Schein, V.E. Fair employment of women through personnel research. Personnel Journal, 1972, 51, 330-335.

A brief review of the recent descriptive research on women in management positions, and suggestions for other behavioral science-based research which remains to be done.

Schuyler,S. Breaking into the trades. Equal Times, Jan. 15, 1977, 17.
Newspaper article describing advantages and disadvantages of Boston-area trade schools for women interested in non-traditional jobs.

Schwank, J.C., Koonce, J.M., Dansby, M.R., Swiney, J.F., & Prather, D.C. Annual Symposium, Psychology in the Air Force. Air Force Academy, Colorado, 1976.

The papers presented in this symposium represent research on training, leadership roles, attitude surveys, job performance, counseling, and integration of women into a previously all-male institution.

Shapiro, H.J., & Stern, L.W. Job satisfaction: male and female, professional and non-professional workers. Personnel Journal, 1975,54, 388-389+.

Five areas of job-satisfaction - work, pay, promotional opportunities, supervision, and coworkers - were measured by means of the job descriptive index. Satisfaction with work and promotion is higher for males than for females, regardless of whether the individual is a professional or a non-professional.

Sharf, J. Second-guessing the legal fair-employment system. APA Monitor, 1977, 8(4), 6.

A discussion of two seemingly contradictory court decisions regarding employment systems and their effect on minority hiring.

Shaw, E.A. Differential impact of negative stereotyping in employee selection. Personnel Psychology, 1972, 25, 333-338.

An experimental manipulation of the variables of sex, financial and domestic problems, and the physical condition of hypothetical graduate school applicants, which found the only significant variable to be sex.

Shepherd, J. They shape our ships. Manpower, 1970 (Dec.), 2(12), 13-19.

Description of training programs provided at Litton Industries' Ingalls Division shipyard in Pascagoula, Miss. Three are Federally funded - a JOBS program which includes many women, a Manpower Development and Training Act program and apprenticeship. Others are company-provided.

Shephard, W.G., & Levin, S.G. Managerial discrimination in large firms. Review of Economics and Statistics, 1973, 55, 412-422.

Recent research on employment discrimination against blacks and women suggests that no single determinant - education, growth, or others - is primary. Few strong statistical correlates of managerial hiring of minorities were found.

Sibbison, V.H., & Peters, D.L. Sex-role stereotypes and occupational preferences and expectations of rural high school females. Paper presented at AERA Annual meeting, S.F., April, 1976.

Simmons, A., Freedman, A., Dunkle, M., & Blau, F. Exploitation from 9 to 5:Report of the 20th Century Fund task force on women and employment. Lexington, MA: D.C. Heath & Co., 1975.

Slevin, D.P. What companies are doing about women's job equality. Personnel, 1971, (July), 48, 8-18.

This title is misleading, for this article is primarily a "how-to-do-it" guideline to companies wanting to institute an affirmative action program. Some research was apparently done, but neither the methodology nor the findings are described.

Spence, J.T., & Helmreich, R. Who likes competent women? Competence, sex-role congruence of interests and subjects' attitudes toward women as determinants of interpersonal attraction. Journal of Applied Social Psychology, 1972, 2, 197-213.

Spence, J.T., Helmreich, R., & Stapp, J. Likability, sex-role congruence of interests and subjects' attitudes toward women as determinants of interpersonal attraction. Journal of Applied Social Psychology, 1972, 2, 197-213.

Stafford, R.E. Hereditary and environmental components of quantitative reasoning. RER, 1972, 42, 183-201.

Staines, G.L., Quinn, R.P., & Shepard, L.J. Trends in occupational sex discrimination: 1969-1973. Industrial Relations, 1976 (Feb.), 15, 88-98.

A study which compared objective and subjective occupational sex discrimination in 1969 and in 1973. No significant change was found in economic discrimination, but there was a sizable relative increase reported in subjective discrimination.

Standing, G. Education and female participation in the labour force. Inter. Labour Rev. 1976 (Nov.-Dec.)114(3), 281-297.

Staples, R. The responses of infants to color. Journal of Experimental Psychology, 1932, 15, 119-141.

Steinberg, E. Upward mobility in the internal labor market. Industrial Relations, 1975, 14, 259-265.

Evidence suggests that for the 5 year period covered by this study, attachment to a particular internal labor market was higher among women than men, among older workers than younger, and among middle-income than lower income despite their higher attachment to given internal labor markets. Women did not exhibit as much upward mobility as did men.

Stroop, J.R. Studies of interference in serial verbal reactions. Journal of Experimental Psychology, 1935, 6, 643-662.

Stroud, J.B., & Lindquist, E.J. Sex differences in achievement in elementary and secondary schools. Journal of Educational Psychology, 1942, 33, 657-67.

Suter, L.E., & Miller, H.P. Income differences between men and career women. American Journal of Sociology, 1973, 78(4), 200-212.

In Huber, J. Changing women in a changing society.

Taynor, J., & Deaux, K. Equity and perceived sex differences: role behavior as defined by the task, the mode and the actor. Journal of Personality and Social Psychology, 1975, 32, 381-390.

Taynor, J., & Deaux, K. When women are more deserving than men: equity, attribution and perceived sex differences. Journal of Personality and Social Psychology, 1973, 28, 360-368.

Thomas, P.J. Utilization of enlisted women in the military. Technical note 76-7, Navy Personnel Research and Development Center, 1976.

This report analyzes the attitudes of enlisted men and commanding officers towards the implementation of women into the Navy. It includes results of research which sought to measure the enlisted women's reactions to Navy management practices. Case studies are presented.

Tools for a woman's trade. Human Behavior, October 1977, 72-73.

Results of an Air Force survey of 1400 women in craft fields which found the tools and equipment to be unsuited for women's size and strength.

Troger, A. The coalition of labor-union women: strategic hope, tactical despair. In R. Baxandall, L. Gordon, & S. Reverby (eds.), America's Working Women, New York: Vintage Books, 1976, 389-399.

Highly ideological; not very informative.

Trumbull, R. A study of relationships between factors of personality and intelligence. Journal of Social Psychology, 1953, 38, 161-73.

Tsuchigane, R., & Dodge, N. Economic discrimination against women in the United States. Lexington, MA: D.C. Heath & Co., 1974.

U.S. Bureau of the census. A statistical portrait of women in the United States. Current Population Reports, Series P-23, no.59, 1976.

U.S. Civil Service Commission, President's Commission on the Status of Women. Report of the Committee on Federal Employment. Washington: Government Printing Office, 1963.

U.S. Commission on Civil Rights. Last hired, first fired: layoffs and civil rights Washington: U.S. Commission on Civil Rights, 1977.

U.S. Congress. Senate. Committee on the Judiciary. Hearings before the Committee on the Judiciary, 91st long, 2nd Session, May 5, 6 & 7, 1970. (Testimony of Georgianna Sillers supporting ERA)

In Baxandall, R. Gordon, L. and Reverby,S. America's Working Women, New York: Vintage Books, 1976, 379-381.

U.S. Dept. of Labor, Employment and Training Administration, Women and work. Washington: GPO, 1977.

A review of research and development projects sponsored by the Employment and Training Administration. Two views of the cause of the earnings gap between men and women are examined, as well as data from the 5-year National Longitudinal Study. There is a section covering special government programs to upgrade the status of women workers, and the conclusion presents recommendations for future research policy.

U.S. Dept. of Labor, Women's Bureau. Careers for women in the 70's. Washington: GPO, 1973.

U.S. Dept. of Labor, Women's Bureau. The earnings gap between women and men. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. Facts on women workers of minority races. Washington: GPO, 1975.

Presents statistical information comparing white and minority women in regard to unemployment, marital status, work experience, participation of mothers in the work force, education and occupation.

U.S. Dept. of Labor, Women's Bureau. Maternity standards. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. Mature women workers: A profile. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. State Labor Laws in transition: From protection to equal status for women. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. Steps to opening the skilled trades to women. Washington: GPO, 1974.

A brief reveiw of the statistics regarding skilled blue-collar women, with specific suggestions to employers for increasing the hiring of women, and utilizing them. Steps for unions and for women are included, and specific programs are mentioned

U.S. Dept. of Labor, Women's Bureau. Working mothers and their children. Washington: GPO, 1977.

A statistical report, based on 1976 data, of mothers in the labor force and minority mothers, classified by marital status and age of children. There are tables illustrating work experience, employment status, occupational group, and child care arrangements.

U.S. Dept. of Labor. Women in Apprenticeship - why not? Research Monograph no. 33. Washington: GPO, 1974.

Summary of the findings of and changes resulting from the Women in Wisconsin Apprenticeships project. Includes findings of employer survey, details of reclassifying DOT codes, and extending apprenticeship to "women's trades."

U.S. Dept. of Labor, Women's Bureau. Women in the economy: Full freedom of choice. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. Women workers today. Washington: GPO, 1976.

U.S. Dept. of Labor, Women's Bureau. Summary of state labor laws for women. Washington: GPO, 1969.

U.S. Dept. of Labor. Manpower report of the President. Washington, D.C.: GPO, 1972.

Veres, H.C., & Moore, K.M. Career innovative and non-innovative women in the two-year college: implications for counseling. Paper presented at AERA annual meeting, Washington, April 1975.

Verheyden-Hilliard, M.E. Cinderella doesn't live here anymore. Manpower, 1975 (Nov.), 7, 34-37.

An article on the sex role stereotyping in vocational schools which at present prepare three-quarters of the enrolled females for homemaking or female-intensive low-paying fields. Suggestions for encouraging girls to consider nontraditional fields are included

Vetter, L. Career counseling for women. The Counseling Psychologist, 1973, 4, 54-66.

Vitola, B.M., Mullins, C.J., & Weeks, J.L. Characteristics of women in the Air Force 1970 through 1973. AFHRL TR-74-59, AD--A000 049. Lackland AFB, TX: Personnel Research Division, July 1974.

A comparison study of male and female enlistees in the Air Force which found that, in the period studied, WAF aptitudes declined less sharply than male aptitudes, that WAF educational level increased while that of males declined, and that the black/non-black racial mix for the sexes was similar.

Waldman, E., & McEaddy, B. Where women work - an analysis by industry and occupation. Monthly Labor Review, 1974, 97(5), 3-13.

The author discusses - the payroll statistics from establishments in non-agricultural industries which provide one of the most detailed appraisals of the employment of women in American industry. The service industry, the trades, the manufacturers and the government are also discussed.

Wallace, M.R. Reflections on women at work. Across the Board, 1976 (Nov.), 13, 39-42.

Personnel opinions on ERA, the reasons for the increasing opportunities for women and advice to working women.

Wallace, P. Impact of equal employment opportunity laws. In J. Kreps (ed.), Women and the American Economy. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1976.

A review of the development of more equal opportunity for women since the passage of Title VII of the Civil Rights Act in 1964. The enforcement of the act, and progressive modifications of it through the establishment of various guidelines are examined. Specific attention is paid to the consent decrees covering the AT&T and Bank of America cases.

Wallace, R.B. Plaintiffs' class action in Title VII litigation. Public Utilities Fortnightly, 1976 (Oct. 7), 98, 57-59.

An explanation of the applications of the class action suit in regard to the Civil Rights Act.

Weaver, C.N. Sex differences in job satisfaction. Business Horizons, 1974(June), 17(3), 43-49.

Black women, like black men, report less job-satisfaction than whites. However, survey results show that female job attitudes are sufficiently different to suggest separate investigation.

Webber, R.A. Perceptions and behaviors in mixed sex work teams. Industrial Relations, 1976, 15(2), 121-129.

Presents results of a study of male and female behavior in both minority and majority situations. Findings were that females as leaders did best in female groups, and that males in such groups exaggerated their own contributions.

Webster, E.G., & Booth, R. Success and failure among male and female Navy paramedical specialists. Journal of Community Psychology, 1976, 4, 81-88.

This article details a study which compares the success and failure, defined by the rate of attrition during the first year of enlistment and completion of paramedical training programs, on the basis of sex. The results were contrary to earlier Navy studies. Women were found to perform as successfully as men in these positions.

Wechsler, D. The measurement and appraisal of adult intelligence. Baltimore: Williams and Witkins, 1958.

Weil, M.W. An analysis of the factors influencing married women's actual or planned work participation. American Sociological Review, Research and Notes, 1961, Vol. 26.

Presents findings that the primary factors affecting a woman's participation in work are: 1) husband's positive attitude; 2) wife's occupation before marriage as professional, technical or managerial and; 3) high educational level of wife.

Wertheimer, B.M. Search for a partnership role, women in labor unions today. Economic Independence for Women. Beverly Hills: Sage Publications. Inc., 1976, 183-210.

An examination of women in the work force; their age and marital status, their job earnings and their rate of employment. The second part focuses on women in labor unions, and the increasing momentum of their participation which led to the formulation of CLUW.

Wertheimer, B., & Nelson, A. The American woman at work. Personnel Management, 1974 (March), 6, 20-23+.

Presents results of a study to find what prevents women from an active role in union activity. Lack of information and experience, rather than lack of interest were found to be the causative factors.

Wertheimer, B.M., & Nelson, A.H. Trade union women: A study of their participation in New York City locals. New York: Praeger Publishers, 1975.

Wesman, A.G. Separation of sex groups in test reporting. Journal of Educational Psychology. 1949, 40, 223-29.

West, K. How to get a blue-collar, MS, 63-65.

Personal histories of three blue-collar women, emphasizing the difficulties they encountered in entering and working in male-dominated fields. Steps to be taken to enter training programs and a list of organizations helpful to women seeking nontraditional employment are included.

Westcott, D.N. Youth in the labor force: an area study. Monthly Labor Review, 1976, 99(7), 3-9.

An analysis of teenage participation in the labor force by sex, race, and residence in the city, suburbs, or non-metropolitan area.

Whalen, G.M., & Rubin, R.S. Labor relations and affirmative action: A tug-of-war. Public Personnel Management, 1977, May-June, 149-155.

This article examines the complications that arise in public sector labor relations when nondiscrimination laws and affirmative action plans are enforced. It does not show how to comply with affirmative action rules but rather describes how such plans affect labor relations when they are carried out.

Woelfel, J.C., Savell, J.M., Collins, B.E., & Bentler, P.M. A preliminary version of a scale to measure sex role attitudes in the Army. Research memorandum 76-3. U.S. Army, Research Institute for the Behavioral and Social Sciences, 1976.

Technical description of item selection and combination, and tests of reliability and validity of a scale to measure sex role attitudes in the Army.

Women push for union power. Business Week, March 30, 1974, 102.

The new organization of the Coalition of Labor Union Women agreed to work to bring more women into unions, to seek affirmative action in the workplace through the union, to be active in governmental politics, and to strengthen their own participation within unions.

Women's Bureau. U.S. Department of Labor. Nontraditional occupations for women of the hemisphere: the U.S. experience. Washington: U.S. Dept. of Labor, 1974.

Personal narrative of one woman's experience in the construction industry at the management level, followed by general question and answer session.

Women's Bureau. Steps to opening the skilled trades to women. Washington: U.S. Department of Labor, 1974.

Women's Bureau. Why not be an apprentice and become a skilled worker. Washington: U.S. Dept. of Labor, 1974.

Questions and answers - pamphlet to interest women.

Women's Opportunity Results Digest, Vol. 1, no. 1, Vol. 1, no. 4, Vol. 2, nos. 3,4,5, 1976, 1977.

In-house publication of the Women's Affirmative Action Committee of the film division of Polaroid Corporation. Issues show increasing sophistication in content and style and illustrate the broad interests of the Committee.

Working women reject stereotyped advertising roles. Advertising Age, 1977 (Feb 14) 48:62.

Wozencraft, M. Sex comparisons of certain abilities. Journal of Educational Research, 1963, 57, 21-27.

Zellner, H. The determinants of occupational segregation. In C.B. Lloyd (ed.) Sex, discrimination and the division of labor. New York: Columbia University Press, 1975, 124-145.

APPENDIX B

LITERATURE REVIEW METHODOLOGY

The first major task performed under this contract was a review of the literature on issues which have a bearing on the employment of women in skilled industrial jobs. References for the review were obtained in part through the use of a computerized literature search. This search retrieved a total of 404 references from the following data files: Inform, Social Science Research, and Psychological Abstracts. (Of these references, many were found to be not directly relevant or not accessible.) In addition to the computerized search, references were obtained in the following manner: perusal of recent indexes, such as the Business Index; a check through card catalogues at the Boston College and M.I.T. libraries; an investigation of special collections at the M.I.T. libraries, such as the Industrial Relations collection; an examination of specially prepared bibliographies on women, such as Astin, et al. (1971) Women: A Bibliography on Their Education and Careers and the document, Sex Stereotyping and Occupational Aspiration: An Annotated Bibliography by the Ohio State Center for Vocational Education; and the procurement of documents through the Women's Bureau of the Department of Labor. Additional information concerning women in the military was obtained through the AFHRL Project Officer, through conversations with various individuals in Washington, and through correspondence with such groups as the Army Research Institute for Behavioral and Social Sciences.

To facilitate the preparation of the formal written review of the literature, which will be included in the final technical report, a coding scheme was developed. The coding system, which is presented in Table B1, was used to classify every article, document, or report which was read. The coding information was maintained on index cards designed specifically for that purpose, as shown in Figure B1.

Table B1

Coding Scheme for Literature on Women/Work/Non-Traditional Careers

I. Mentioned Characteristics of Sample or Group Under Discussion

1. Sex
2. Family Size
3. Education
4. Earnings/Income
5. Occupations
6. Race
7. Marital Status
8. Age

II. Personnel Policies

11. Hiring, Recruitment
12. Training
13. Promotion
14. Fringe Benefits (Maternity, etc.)
15. Affirmative Action Programs
16. Screening/Hiring Devices
17. Seniority/Layoff

III. Work-Related Legislation

21. Equal Opportunity/Pay
22. Maternity Benefits
23. Vocational Education
24. Suits, Court Actions

IV. Career Field Issues

A. Industrial (Blue Collar Fields)

31. Mechanical
32. Electronics
33. Construction
34. Apprenticeships
35. General Blue Collar Discussions

B. Other Fields

36. Academic
37. Professional
38. Managerial, Administrative
39. All Other

V. Sex Bias, Sex Discrimination, Sex-Role Stereotyping

41. Occupational Stereotyping
42. Sex Bias by Employers
43. Attitudes of Workers
44. Myths About Female Workers
45. Perceptions of Discrimination
46. Sex-Role Socialization
47. Fear of Success

VI. Career Choice

51. Occupational Aspirations
52. Vocational Interests
53. Career Curricula
54. Career Guidance

Table B1, continued

VII. Job-Related Behaviors/Attitudes

56. Job Satisfaction, Morale
57. Turnover, Tenure
58. Absenteeism, Tardiness
59. Overtime; Scheduling
60. Productivity, Work Performance
61. Commitment, Motivation
62. Interpersonal Behavior
63. Leadership
64. Promotability
65. Other

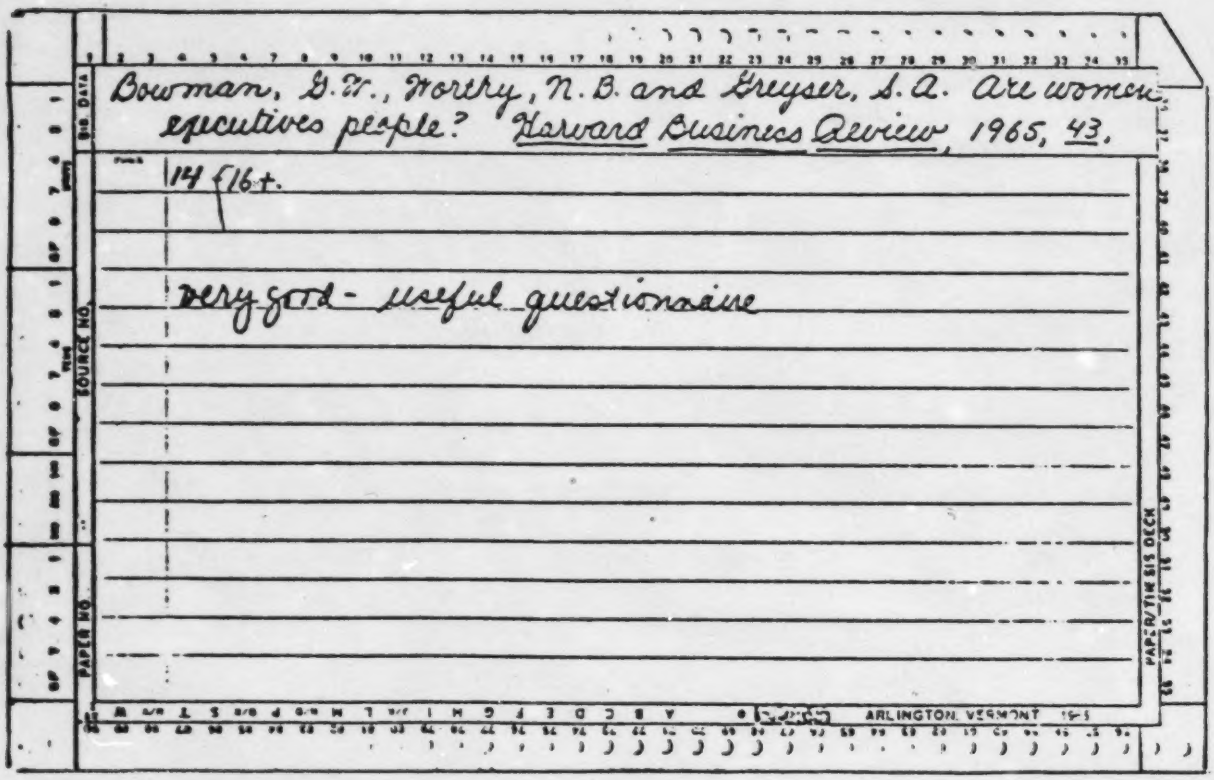
VIII. Special Topics Relating to Women Workers

66. Labor Movement, Unions
67. Military Women
68. Re-entry for Older Women
69. Vocational Education for Women
70. Job-Related Sex Differences
71. Unemployment
72. Historical Trends
73. Child Care/Family Responsibilities
74. Leisure Activities of Working Women
75. Women's Social Status
76. Rates of Labor Force Participation

IX. Other Special Topics

81. Quality of Working Life
82. Military Personnel/Policies
83. Work and Education Programs

Figure B1


Bowman, G.W., Worthy, N.B. and Greyser, S.A. Are women executives people? Harvard Business Review, 1965, 43.
14 (16+.
very good - useful questionnaire
SOURCE NO.
PAPER NO.
ARLINGTON, VERMONT

An example of the index cards used for coding articles, documents and reports for the literature review.

APPENDIX C

PILOT STUDY INSTRUMENTS

135145

Personnel Administrator's Questionnaire

Please answer the following questions by placing a check or an "x" in the appropriate space, or by supplying the information requested.

1. At the present time, approximately how many men and women in your firm are employed in skilled blue collar jobs?

   _____ men _____ women

2. Approximately how many men and women in your firm are in supervisory roles in skilled blue collar areas at the present time?

   _____ men _____ women

3. Has your organization issued a policy statement affirming its commitment to the advancement/utilization of women?

   ( ) Yes
   ( ) No

4. If yes, how has the policy statement been communicated to others? (Check as many as applicable.)

   ( ) Appearance in internal newsletter, memorandum, etc.
   ( ) Posting in employee lounges, canteens, building entrances, employment office, and so forth
   ( ) Inclusion in employee handbook
   ( ) Notification to employee unions
   ( ) Notification to recruitment sources (employment agencies, schools, etc.)
   ( ) Notification to public media (local newspapers, radio stations, etc.)
   ( ) Discussions in special workshops or meetings with management and supervisors
   ( ) Discussions in special workshops or meetings with workers
   ( ) Other: specify _____
   ( ) Not applicable

5. Which of the following statements best describes your company's progress in incorporating women into skilled blue collar areas?

   ( ) We have experienced a relatively steady, continuous progress toward the expansion of women's participation in blue collar jobs.
   ( ) Much of our progress in the past 5 to 10 years in expanding women's participation in blue collar careers is a result of company policies implemented in one specific year. (Please specify that year: .)
   ( ) We have experienced relatively little expansion of women's participation in blue collar fields within the past 5 to 10 years.

6. Has your firm found it necessary to undertake special recruitment efforts to attract women into non-traditional skilled blue-collar jobs?

   ( ) Yes, particularly external recruitment
   ( ) Yes, particularly internal recruitment
   ( ) Yes, a combination of external and internal recruitment
   ( ) No

7. Does your firm employ a special recruiter whose job it is to locate and attract female candidates for non-traditional jobs?

   ( ) Yes
   ( ) No

8. Please give your perceptions of the relative effectiveness of each of the following strategies in terms of your firm's efforts to recruit women as opposed to men into skilled blue collar jobs.

MEW = more effective for women
EE = equally effective for both sexes
MEM = more effective for men
EI = equally ineffective for both sexes
NU = not used for either sex

	MEW	EE	MEM	EI	NU
a. Help-wanted advertisements					
b. Printed publicity to employment agencies					
c. Internal publicity to female employees					
d. Printed publicity to women's organizations					
e. Printed publicity to local schools					
f. Special incentives to female employees					
g. Audio-visual presentations in the community					
h. Tours of the work environment for prospective employees					
i. Word-of mouth referrals					
j. Other: specify					

9. Of the 10 strategies listed in the previous question, which do you feel has been most successful in attracting women into skilled blue collar jobs? Specify a letter from a to j: _____.

10. Does your firm use formal, standardized screening or selection instruments for hiring employees in blue collar career fields?

( ) Yes
( ) No

11. If yes, have any specific efforts been made by your firm to design or utilize selecting instruments which eliminate or reduce sex bias?

( ) Yes
( ) No

12. If your firm uses commercially prepared selection instruments for hiring employees in skilled mechanical and/or electrical occupations, please specify the name and producer of these tests. (Check here if your firm uses its own tests: _____.)

_____

_____

13. In terms of performance on screening/selection tests for skilled blue collar jobs, would you say that a male and female with the same score would be likely to have comparable on-the-job performance?

( ) Men with a given score tend to perform better than women with the same score.
( ) Men and women with the same score tend to perform similarly.
( ) Women with a given score tend to perform better than men with the same score.
( ) Don't know.

Skip to Question 14.

14. What type of selection procedure, other than or in addition to screening tests, does your firm use in hiring employees for skilled blue collar jobs? Check as many of the following as apply.

( ) Informal interview
( ) Past employment record
( ) Recommendations
( ) On-the-job trial
( ) Other: specify _____

15. Have your criteria or type of instruments changed as a direct result of company policies to hire more women for skilled blue collar jobs?

( ) Yes (Please describe below briefly what changes have been effected) ( ) No ( ) Don't know

_____
_____
_____
_____

16. Have you formally validated your selection criteria against on-the-job performance?

( ) Yes
( ) No

17. Do your personnel interviewers receive explicit training concerning sex bias/ discrimination?

( ) Yes
( ) No

18. Does your firm employ a special equal employment opportunity coordinator?

( ) Yes
( ) No

19. Does your firm offer any type of assistance to prepare women for entry into predominantly male work crews?

( ) Yes (Please briefly describe below)
( ) No

_____
_____
_____

20. Has your firm held meetings or seminars with any of the following groups to discuss the utilization of women in non-traditional jobs or to sensitize them to the problems of women in non-traditional work situations? (Check as many as apply.)

( ) Managers
( ) Management trainees
( ) Front-line supervisors
( ) Male skilled workers

21. Does your personnel department offer any job or career counseling for its employees?

( ) Yes (Please describe below briefly your counseling program)

( ) No

_____

_____

_____

22. Does your company provide training for individuals who are hired for skilled blue collar jobs?

( ) Yes, structured training is provided routinely to both sexes.
( ) Yes, some individuals receive training as required.
( ) No, individuals are expected to have the required skills when they are hired.

(Skip to Question 28.)

23. Which of the following procedures, if any, does your company use in the training of individuals for skilled blue collar jobs?

	Degree of Utilization		
	Use Extensively	Use Somewhat	Do Not Use
a. Mixed sex instructional classes			
b. Sex-segregated instructional classes			
c. Special instructional classes for women only			
d. On-the-job training			
e. Apprenticeship programs			
f. Other: specify			

24. Is there a policy in your organization concerning the maximum age for an individual entering a training program in a skilled job?

( ) Yes (What is the maximum age? _____)

( ) No

( ) Not applicable

25. Have your training materials been reviewed/revised with respect to potential sex biases in language or orientation?

( ) Yes

( ) No

( ) Not applicable

26. During the past 12 months, approximately what percent of males and females have dropped out of industrial training programs (or quit during the first 3 months of on-the-job training)?

Males: _____ %

Females: _____ %

Not Applicable: _____

Skip to Question 28.

27. Could you please indicate how important each of the following factors is with respect to females, relative to males, dropping out of training? (If objective information from exit interviews is not available, please give your general impressions and check this box: _____.)

MIF = more important for females
EI = equally important for males and females
MIM = more important for males
NI = not important for either sex
DK/NA = don't know or not applicable

	MIF	EI	MIM	NI	DK/NA
a. Dislike for the type of work					
b. The work is too physically demanding or tiring					
c. Conflicts with family/child care responsibilities					
d. Husband moving to distant location					
e. Pregnancy					
f. Difficult relationships with co-workers					
g. Lack of support from training instructors/ supervisors					
h. Inadequate physical facilities (women's rest rooms, etc.)					

28. Does your organization have an explicit policy concerning transferring married women in industrial jobs to new geographic locations?

( ) Yes (Please describe your policy below)

( ) No (Please indicate below if this has created a problem)

_____
_____
_____
_____

29. Does your company have a policy against hiring spouses for the same department?

( ) Yes → 30. If yes, has this policy resulted in any difficulties concerning the utilization of women in industrial/production departments?

( ) Yes (Please describe the difficulties below)

( ) No

_____
_____
_____

( ) No

31. What type of grievance procedure has your company instituted for handling complaints of sex discrimination? (Check as many as apply.)

( ) Handled by unions
( ) Formal administrative hearing
( ) Hearing by external arbiter
( ) Handled by ombudsperson
( ) Hearing by an appointed committee
( ) Hearing by an employee-elected committee
( ) Informal channels
( ) No established procedures

32. Has your company encountered any difficulties in the utilization of women in terms of physical facilities of the work area (for example, rest rooms)?

( ) Yes
( ) No

33. The following set of questions relate to your firm's current policies concerning maternity leave.

Does your firm require women to take a prenatal leave?

( ) Yes (At what point in the pregnancy? _____)
( ) No

34. Does your firm require women to take a postnatal leave?

( ) Yes (For how long after delivery? _____)
( ) No

35. Does your company permit women to return to their jobs after a maternity-related absence?

( ) Yes, usually
( ) Yes, sometimes
( ) Not usually

36. If women are allowed to return to their jobs after a maternity-related absence, what is the maximum length of the absence permitted?

( ) 0 to 4 months
( ) 5 to 8 months
( ) 9 to 12 months
( ) Up to 2 years
( ) Unlimited--a woman may return at any time
( ) Not applicable--a woman is not usually allowed to return

37. Does your company offer paid maternity leave?

( ) Yes → 38. If yes, what is the maximum period of paid maternity leave?

_____

39. What percentage of the woman's salary is paid under the terms of your maternity leave plan? _____ %

40. Is your paid maternity leave plan administered by an insurer?

( ) Yes, entirely
( ) Yes, in part
( ) No

( ) No

41. How long has your current maternity leave policy been in operation?

_____

42. Does your company offer child-care facilities on the premises?

( ) Yes
( ) No

We would appreciate your providing us with some general descriptive information concerning your firm.

43. In what region of the country are you located?

( ) Northeast ( ) Southeast ( ) Midwest
( ) Southwest ( ) Northwest

44. How many people does your firm employ in all branches and plants?

( ) Under 5,000 ( ) 5,000 to 9,999 ( ) 10,000 to 14,999
( ) 15,000 to 19,999 ( ) 20,000 to 24,999 ( ) 25,000 or over

45. In which type of industry is your company primarily involved?

( ) Manufacturing, industrial goods
( ) Manufacturing, consumer goods
( ) Construction, mining, oil
( ) Defense or space industry
( ) Transportation, public utilities

46. What were your company's sales figures for the year ending 1976? _____

47. Is your company covered by Revised Order 4?

( ) Yes
( ) No
( ) Don't know

48. Please indicate below approximately how many men and women were hired during the last 5 years for jobs in skilled blue collar jobs. If this information is not available for separate classes of technical workers, please give total figures only.

	Electronics Areas		Mechanical Areas		Other Areas		Totals	
	Males	Females	Males	Females	Males	Females	Males	Females
1976								
1975								
1974								
1973								
1972								

Supervisor's Questionnaire

Please answer the following questions by placing a check or an "x" in the appropriate space, or by supplying the information requested.

1. Compared with 10 years ago, would you say the number of women in skilled blue-collar fields in your firm is increasing, decreasing, or continuing at about the same rate?

( ) Don't know
( ) Rapidly decreasing
( ) Slightly decreasing
( ) Continuing at about the same rate
( ) Slightly increasing
( ) Rapidly increasing

2. Could you please indicate below your perceptions concerning the effect that the increasing utilization of women has had on various aspects of your industrial operations.

	Very Positive Effects	Rather Positive Effects	No Discernible Effects	Rather Negative Effects	Very Negative Effects
a. Male employees' morale					
b. Female employees' morale					
c. Productivity					
d. Efficiency					
e. Profits					
f. Organizational climate					
g. Ease of recruitment					
h. Turnover					
i. Absenteeism and/or tardiness					
j. Scheduling					
k. Attitudes of supervisors/managers toward women in non-traditional roles					

3. How much visible management support do you feel has been given to the hiring, training, or promotion of women in non-traditional blue-collar career fields in your organization?

( ) Extensive support
( ) Considerable support
( ) Ambivalent support
( ) Virtually no support

4. How successful would you say your firm's procedures for training men and women for skilled blue-collar jobs are with respect to each of the following? (Check here if your firm provides no training: _____.)

	More Effective For Women	Effective For Both Sexes	More Effective For Men	Ineffective For Both Sexes	Don't Know
a. Providing individuals with the skills required to carry out their jobs					
b. Retaining individuals throughout the training period					
c. Improving the individuals' self-confidence or self-esteem					

5. Below are a number of obstacles which are sometimes perceived when policies designed to promote equal opportunity for women are put into effect. Please rate how important you feel each of these problems has been in limiting the participation of women in skilled blue-collar jobs in your firm.

	Extremely Important	Moderately Important	Slightly Important	Not Important
a. General lack of interest of women in industrial fields				
b. Unavailability of women with prerequisite skills and training				
c. Difficulties with male workers accepting female co-workers				
d. Lack of commitment of top-level management to the utilization of women				
e. Lack of commitment of front-line supervisors to the utilization of women				
f. Problems with the quality of work and productivity of female workers				
g. Excessive absenteeism, turnover and/or tardiness of female workers				
h. Physical limitations of women				
i. Limitations of female applicants' aptitudes in such areas as mechanical reasoning, spatial visualization, mathematical problem-solving, etc.				
j. Union-related difficulties				
k. Declining economic conditions				
l. Physical plant limitations (absence of women's rest rooms, etc.)				
m. Difficulties arising from the need to transfer workers to other geographic areas				

6. Have you found that you make allowances for a female that you would not have made for a male under your supervision?

( ) I treat men and women as equals
( ) Yes, I make a few allowances for women
( ) Yes, I make a great many allowances for women
( ) There are no women in my section

7. Would you be more reluctant to take disciplinary action against a woman than you would against a man?

( ) Yes, very much more reluctant
( ) Yes, somewhat more reluctant
( ) No, there would be no difference
( ) No, I would be more reluctant to take disciplinary action against a man

8. Please indicate below your views concerning male-female differences on job-related matters for those workers employed in skilled blue-collar jobs:

	Males Much Superior	Males Somewhat Superior	Males and Females About Equal	Females Somewhat Superior	Females Much Superior	Don't Know or Not Applicable
a. Attendance record						
b. Punctuality						
c. Willingness to work overtime						
d. Ability to get along with co-workers						
e. Cooperativeness						
f. Attitude toward their work						
g. Productivity						
h. Accident or error rates						
i. Quality of work performed						
j. Ability or skill potential for advancement						
k. Non-quit rates (tenure)						
l. Reliability/ dependability						
m. Willingness to accept supervision						
n. Non-dismissal rates						

9. Have you ever supervised any women in a skilled blue-collar job?

( ) No

( ) Yes

10. How many women in skilled jobs are currently under your supervision?

_____.

11. Which of the following statements would you say best describes the behavior of skilled blue-collar male workers with regard to female co-workers?

( ) The men actively encourage and support the women, often making special efforts to help them out when they are just starting.

( ) The men are rather friendly to the women and seem to enjoy working in mixed-sex groups.

( ) The men essentially treat the women as they would treat any other co-worker.

( ) The men are somewhat unfriendly to the women, avoiding dealings with them whenever possible.

( ) The men are openly hostile to the women, sometimes leading to serious production problems.

( ) Don't know.

12. Which of the following statements would you say best describes the behavior of skilled blue-collar female workers with regard to male co-workers?

( ) The women actively demonstrate that they are pleased to be a part of a predominantly male work crew.

( ) The women are rather friendly and willing to ask questions or ask for assistance when needed.

( ) The women are rather unfriendly and too timid or too afraid to ask questions or ask for assistance when needed.

( ) The women are defiant and hostile toward the men, sometimes leading to serious production problems.

( ) Don't know.

13. If a woman becomes pregnant, there is the possibility that she will have to limit her activities. In your opinion, for what length of time prior to delivery can a pregnant woman function effectively in the type of work which you supervise?

( ) Up until one or two weeks prior to delivery
( ) Up until four weeks prior to delivery
( ) Up until six weeks prior to delivery
( ) Up to two months prior to delivery
( ) Up to three months prior to delivery

14. Are women in your career field capable of progressing as rapidly as their male co-workers in terms of skills and abilities?

( ) No, women progress much more slowly
( ) No, women progress somewhat more slowly
( ) Yes, women progress equally as rapidly
( ) No, women progress somewhat more rapidly
( ) No, women progress a great deal more rapidly

15. In your experience as a supervisor, which of the following statements most accurately reflects your opinion concerning the supervision of men and women?

( ) Men are much easier to supervise
( ) Men are somewhat easier to supervise
( ) There is no difference in supervising men or women
( ) Women are somewhat easier to supervise
( ) Women are much easier to supervise
( ) I have never supervised a woman, so I can't make the comparison
( ) I have never supervised a man, so I can't make the comparison

16. As a supervisor, do you have any preference as to whether you supervise men or women?

( ) I would prefer to supervise only men
( ) I have no preference as to whether I supervise men or women
( ) I would prefer to supervise only women
( ) I would prefer to supervise a group comprised of men and women

17. On the whole, how do you feel males and females compare in terms of their effectiveness as supervisors in your career field?

( ) Men are much more effective than women
( ) Men are somewhat more effective than women
( ) Men and women are equally effective
( ) Women are somewhat more effective than men
( ) Women are much more effective than men

18. Some people feel that some jobs are inappropriate for women, while others feel that women can handle all types of work. Are there any <u>specific</u> jobs which you feel are inappropriate for a women? Why is this?

_____
_____
_____
_____

19. What are the most <u>positive</u> things which have resulted from women being hired for skilled blue-collar jobs?

_____
_____

20. What are the most <u>negative</u> things which have resulted from women being hired for skilled blue-collar jobs?

_____
_____

21. Overall, would you say that your own basic attitude toward the utilization of women in skilled blue-collar jobs is favorable or unfavorable?

( ) Strongly favorable
( ) Moderately favorable
( ) Slightly favorable
( ) Neither favorable nor unfavorable
( ) Slightly unfavorable
( ) Moderately unfavorable
( ) Strongly unfavorable

We would appreciate your providing us with some background information about yourself.

22. What is your sex?

( ) Male
( ) Female

23. How old were you on your last birthday? _____

24. What is your marital status?

( ) Married
( ) Single
( ) Widowed, divorced, or separated
( ) Other

25. What is the highest level of education you have attained?

( ) Grade school/some high school
( ) Completed high school
( ) Some college or post-high school training
( ) College degree
( ) Post-college training

26. Please specify your role or title in your organization: _____

_____

27. How many years have you worked for this company? _____ years.

28. Can you offer any recommendations to the Air Force concerning policies for the utilization of women in blue-collar careers? Any suggestions concerning recruitment, training, promotion, benefits, preparation of other employees, and so forth, would be greatly appreciated.

_____

_____

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_____

_____

Management Questionnaire

Please answer the following questions by placing a check or an "x" in the appropriate space, or by supplying the information requested.

1. Compared with 10 years ago, would you say the number of women in skilled blue collar fields in your firm is increasing, decreasing, or continuing at about the same rate?

( ) Don't know
( ) Rapidly decreasing
( ) Slightly decreasing
( ) Continuing at about the same rate
( ) Slightly increasing
( ) Rapidly increasing

2. Could you please indicate below your perceptions concerning the effect that the increasing utilization of women has had on various aspects of your industrial operations.

	Very Positive Effects	Rather Positive Effects	No Discernible Effects	Rather Negative Effects	Very Negative Effects
a. Male employees' morale					
b. Female employees' morale					
c. Productivity					
d. Efficiency					
e. Profits					
f. Organizational climate					
g. Ease of recruitment					
h. Turnover					
i. Absenteeism and/or tardiness					
j. Scheduling					
k. Attitudes of supervisors/managers toward women in non-traditional roles					

3. How much visible management support do you feel has been given to the hiring, training, or promotion of women in non-traditional blue-collar career fields in your organization?

( ) Extensive support
( ) Considerable support
( ) Ambivalent support
( ) Virtually no support

4. How successful would you say your firm's procedures for training men and women for skilled blue-collar jobs are with respect to each of the following? (Check here if your firm provides no training: _____.)

	More Effective For Women	Effective For Both Sexes	More Effective For Men	Ineffective For Both Sexes	Don't Know
a. Providing individuals with the skills required to carry out their jobs					
b. Retaining individuals throughout the training period					
c. Improving the individuals' self-confidence or self-esteem					

5. Below are a number of obstacles which are sometimes perceived when policies designed to promote equal opportunity for women are put into effect. Please rate how important you feel each of these problems has been in limiting the participation of women in skilled blue-collar jobs in your firm.

	Extremely Important	Moderately Important	Slightly Important	Not Important
a. General lack of interest of women in industrial fields				
b. Unavailability of women with prerequisite skills and training				
c. Difficulties with male workers accepting female co-workers				
d. Lack of commitment of top-level management to the utilization of women				
e. Lack of commitment of front-line supervisors to the utilization of women				
f. Problems with the quality of work and productivity of female workers				
g. Excessive absenteeism, turnover and/or tardiness of female workers				
h. Physical limitations of women				
i. Limitations of female applicants' aptitudes in such areas as mechanical reasoning, spatial visualization, mathematical problem-solving, etc.				
j. Union-related difficulties				
k. Declining economic conditions				
l. Physical plant limitations (absence of women's rest rooms, etc.)				
m. Difficulties arising from the need to transfer workers to other geographic areas				

6. How long, on the average, would you say it takes for a skilled female worker to progress to a supervisory level?

_____

7. How long, on the average, would you say it takes for a skilled male worker to progress to a supervisory level?

_____

8. If there is a discrepancy between your responses to Questions 6 and 7, could you offer a possible explanation for the difference?

_____

_____

9. Please indicate below your perceptions concerning male-female differences on job-related matters for those workers employed in skilled blue-collar jobs:

	Males Much Superior	Males Somewhat Superior	Males and Females About Equal	Females Somewhat Superior	Females Much Superior	Don't Know or Not Applicable
a. Attendance record						
b. Punctuality						
c. Willingness to work overtime						
d. Ability to get along with co-workers						
e. Cooperativeness						
f. Attitude toward their work						
g. Productivity						
h. Accident or error rates						
i. Quality of work performed						
j. Ability or skill potential for advancement						
k. Non-quit rates (tenure)						
l. Reliability/ dependability						
m. Willingness to accept supervision						
n. Non-dismissal rates						

10. We are interested in your perceptions concerning the degree to which policies regarding the utilization of women have been successfully implemented. In the following section, you will be asked to rate various aspects of your policies/programs.

Activities	Actually Achieved and on Schedule	Achieved But With Some Delays	Significant Delays in Implementation	Not Implemented Yet	No Such Policy Developed
a. Recruiting women applicants for skilled industrial jobs					
b. Modifying/updating selection procedures					
c. Modifying/updating procedures for validating selection criteria					
d. Modifying/updating job descriptions					
e. Training women for skilled industrial jobs					
f. Preparing staff for the utilization of women					
g. Promoting women in skilled jobs to the supervisory level					

11. Are managers and supervisors in your organization evaluated at all on the basis of their performance in meeting objectives for hiring/training women in industrial areas?

( ) Never
( ) Not usually
( ) Yes, in many cases
( ) Yes, routinely

12. If yes, could you please briefly describe what incentives, if any, are offered to those supervisors who help to meet company objectives?

_____

_____

13. The increasing use of women in skilled blue-collar jobs stems from a variety of concerns and pressures. How important do you feel each of the following reasons for utilizing women and/or for women's opportunity is in the case of your company?

	Extremely Important	Moderately Important	Slightly Important	Not Important
a. Desire to comply with legal requirements				
b. Pressure from female employees				
c. Pressure from external agencies or groups, such as women's groups, educational institutions, etc.				
d. Concern with the possibility of a class-action suit				
e. Desire to give women a chance to develop a skill and/or earn good wages				
f. Shortage of personnel in skilled areas				
g. Desire to remedy previous discrimination				

14. Some people feel that some jobs are inappropriate for women, while others feel that women can handle almost all types of work. Are there any specific jobs which you feel are inappropriate for a woman? Why is this?

_____

_____

_____

_____

15. What are the most positive things which have resulted from women being hired for skilled blue-collar jobs?

_____

_____

_____

16. What are the most negative things which have resulted from women being hired for skilled blue-collar jobs?

_____

_____

_____

17. Overall, would you say that your own basic attitude toward the utilization of women in skilled blue-collar jobs is favorable or unfavorable?

( ) Strongly favorable
( ) Moderately favorable
( ) Slightly favorable
( ) Neither favorable nor unfavorable
( ) Slightly unfavorable
( ) Moderately unfavorable
( ) Strongly unfavorable

We would appreciate your providing us with some background information about yourself.

18. What is your sex?

( ) Male
( ) Female

19. How old were you on your last birthday? _____.

20. What is your marital status?

( ) Married
( ) Single
( ) Widowed, divorced, or separated
( ) Other

21. What is the highest level of education you have attained?

( ) Grade school/some high school
( ) Completed high school
( ) Some college or post-high school training
( ) College degree
( ) Post-college training

22. Please specify your role or title in your organization: _____

_____

23. How many years have you worked for this company? _____ years.

24. Can you offer any recommendations to the Air Force concerning policies for the utilization of women in blue-collar careers? Any suggestions concerning recruitment, training, promotion, benefits, preparation of other employees, and so forth, would be greatly appreciated.

_____

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